Fairfax County, Virginia

Department of Information Technology

# FY 2009 INFORMATION TECHNOLOGY PLAN

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**Fairfax County, Virginia**
**Department of Information Technology**

# FY 2009
# INFORMATION TECHNOLOGY PLAN


Fairfax County
VIRGINIA

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# IT GOVERNANCE

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# SECTION 1
# IT GOVERNANCE

## PLAN OVERVIEW

Like many governments faced with growth in demand for services while confronting a changing economy, the County is faced with major challenges and opportunities where IT innovation is essential. These challenges and opportunities are created by heightened expectations from the County's constituents and business community who need to interact and conduct business with the County utilizing modern automation capabilities combined with the need to leverage and enhance limited staff resources necessary to accomplish the work, especially in an atmosphere of economic decline. Recognizing that IT innovation fuels business transformation and responsiveness, the expectation for nimble IT enabled service on demand occurs within an environment of rapid change and finite resources. The County's Information Technology (IT) capabilities must be contemporary, flexible, scalable, and secure with the ability to respond to ever changing requirements. The County's IT environment builds on an enterprise architecture that includes standard platforms and tools that supports a variety of needs and a supportable portfolio of systems. The supporting operation is designed to ensure optimum performance, implementation of solid products, and faster solution delivery at a fully leverage cost.

To enable Fairfax County's technology program to meet the challenge, continued emphasis is placed on implementing systems that provide improved service efficiencies, on-line capabilities, promote cross functional business processes, enable data mining for more effective decision making, make information more publicly accessible, enable key County priorities such as Telework , Cool Counties initiatives, Public Safety, Land Development initiatives, and maintain a supportable and secure infrastructure. The projects enable more effective internal communication and use of information within the County government organization, and externally with the community, allowing secure access to County data and services. Emphasis is also placed on processes to ensure that IT projects are managed consistently through proper levels of oversight and tracking, and ensure that IT investments are leveraged, deliver a return on the investment and are aligned with the County's strategic goals.

This plan summarizes the County's underlying principles for IT Investments and Governance *(Section 1)*; Initiatives and Strategic Directions (*Section 2*); current IT Projects and Planned Enhancements (*Section 3*); Management Controls and Processes for projects (*Section 4*); and the foundation Information Technology Architecture (*Section 5*). The plan describes adopted technology investments that accomplish identified goals and objectives; provides status of ongoing project accomplishments; identifies resources required for implementation; and states the return on investment benefits projected by the sponsors of the projects. Projects are linked to agency sponsor strategic plans and the Board of Supervisor's goals and Vision Elements.

The modernization efforts described in this plan are funded in the Information Technology Fund - Fund 104 and Fund 120 (E-911). Sometimes projects included in the IT Plan are funded from other sources such as sponsor agency income funds or other monies to take advantage of total available County dollars, augment investment funding capacity, and provide additional opportunities to meet IT investment needs. Governance, architecture, and infrastructure for supporting IT projects are described within this plan, however, ongoing Department of Information Technology (DIT) operating and personnel costs which are funded in the General Fund - Fund 001 and the Technology Infrastructure Fund - Fund 505, and the routine operational activities, on-going support efforts, and normal upgrades and maintenance work is not reflected in this plan. Together, the four funds support the comprehensive Information Technology delivery for all agencies, lines of business and services. Additional details of each fund can be found in the Fairfax County Fiscal Year 2009 Adopted Budget Plan.

## Information Technology Goals

In recognition of the need to link the County's Information Technology efforts more closely to its business goals, the senior management of the County established the County-wide Information Technology (IT) goals, determining priorities within the context of the service demands that must be met within resource availability and opportunities. The formulation of the goals provided a framework by which the allocation of critical resources would be directed and categorized and aligned with County goals. The goals are reviewed each year for applicability and relevance against new demands on county business requirements and IT industry trends.

Based on global changes in social and economic paradigm shifts, the following priorities have been validated and are adopted for funding:

- *Mandated Requirements*
- *Leveraging of Prior Investments*
- *Enhancing County Security*
- *Improving Service Quality and Efficiency*
- *Ensuring a Current and Supportable Technology Infrastructure*

# 1. TECHNOLOGY ORGANIZATION AND GOVERNANCE

Technology is managed as an enterprise asset in Fairfax County. The Department of Information Technology (DIT) is responsible for direction of and execution of information technology and communications systems and support services on an enterprise-wide infrastructure, architecture framework and standards for most systems. County agencies have a limited number of technology staff that support small scale agency business specific point solutions or industrial systems and matrix to DIT. The County's Chief Technology Officer is the Director of the County's Department of Information Technology.

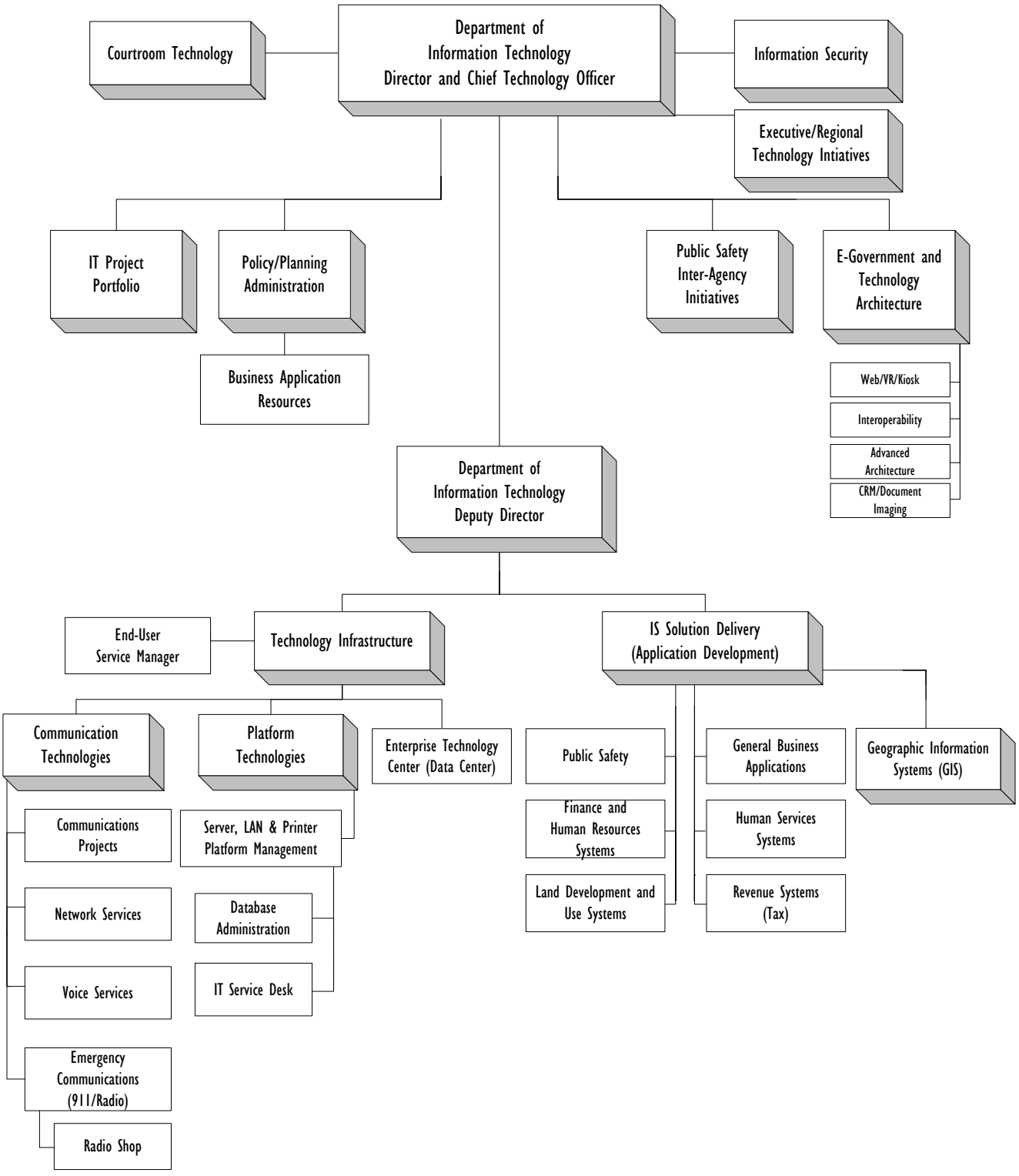
The Deputy County Executive for Information Departments (DCE) is responsible for the overall direction for innovation and enterprise information policy. The DCE directs a broad range of information related departments and related agency functions, leading efforts that integrate with or enhance the mission of delivering strategic technology initiatives. This model groups the County's information programs and services under a single authority to provide efficient and effective constituent services. Collaboration among the departments which include the Department of Information Technology (DIT), Fairfax County Library/ Archives (FCPL), Department of Cable Communications and Consumer Protection (DCCCP) and the Office of Public Affairs (OPA) deliver programs that make up the county's e-Government channels, public access capabilities, enterprise infrastructure architecture, document management, interoperability and county-wide communications strategy. In addition the DCE has oversight of the Health Insurance Portability Accountability Act (HIPAA) Compliance Office that works directly with DIT's Information Security Office to ensure that an appropriate IT security architecture, standards and enforcement mechanism are in place to protect HIPAA and other privacy laws for covered systems and data.

The information and web content function in the Office of Public Affairs works closely with the DCE to develop a comprehensive communications message strategy and to ensure the integrity of content for published information served through the County E-government programs. The DCE also serves as the liaison to the Economic Development Authority in conveying the County's best technology practices and assisting with marketing the County to prospective businesses. The DCE's broad responsibility for information spans policy, information content strategy, books, television, enterprise technology architecture, management of documents, and compliance.

In FY 1999 an internal County executive group, the Senior IT Steering Committee, was created to assist and advise the DCE and Chief Technology Officer. Today, this group includes the County Executive, the Deputy County Executives, Director of the Department of Management and Budget, and Director of the Department of Information Technology/CTO. The committee's work is augmented by the Senior Management Team composed of County department heads for participation in key policy issues. The Senior IT Steering Committee meets on a regular basis to review specific IT initiatives, opportunities and issues; set the County's IT strategy based on the Board of Supervisors' direction; and approve the annual IT investment plan. For strategy and governance specifically focused on the County's e-government program, the DCE hosts and chairs the E-government Steering Committee, including the directors of DIT, OPA, FCPL, and DCCCP, as well as the County's WEB and Public Access Technology Director (DIT e-Government group), and the WEB Content Director in OPA. This committee collaborates with the DCE on policy and opportunities to expand the use and effectiveness of on-line capabilities through the e-government channels and new cyber services such as Social Media. In addressing policy issues, the group is assisted by the IT Security Director and the Office of the County Attorney.

## 1.1 DEPARTMENT OF INFORMATION TECHNOLOGY ORGANIZATION

### Fairfax County
### Department of Information Technology
### Organization Chart



The Department of Information Technology (DIT) provides leadership, process, governance, architecture, resources and expertise in deploying modern information technologies to improve government efficiency and citizen access to government information and services. To provide focus and direction to staff within the department and to help plan for the future, an overall mission was established together with eight goals. The mission and goals statements were developed with considerable input from staff, and the Senior IT Steering Committee regarding the important issues facing the department.

Fairfax County continues to make the necessary investments in information technology hardware and software, which through careful planning, cooperative business and technical execution provides its citizens with a return on investment in the form of improved services. The department's goals were established to energize the department in performing its functions of developing and maintaining current information technology systems, and providing a technology infrastructure and customer service support to County agencies. The Department of Information Technology is charged with establishing technology architecture, implementing and managing systems, applications, communications, and the overall management and security of the County's information assets.

The organizational structure of the Department of Information Technology (DIT) has evolved over the years to align with changing priorities, trends and expertise requirements, and to leverage technology platforms and available resources. It is designed to address the ongoing evolution of technology and its utilization in support of the business functions within County government. This evolution has seen a tremendous growth in web based systems and distributed architectures and wireless hand-held computers, as well as the number of platforms that support enterprise-class solutions and software applications used in support of various County functions. These information technology systems have become crucial components in the day-to-day operations of almost all areas of County government, and the increasing complexity and sophistication of these systems require well-trained end users and support staff.

DIT is organized into subject matter expert groups: Application Solution Delivery supports both enterprise-wide systems including corporate applications, document management, CRM platform, and geographical information systems that are used by all agencies, and agency business specific applications development and support; Technology Infrastructure manages all hardware, communications and network platforms enterprise-wide, integration tools, enterprise messaging applications, desktops and the network based digital multi-function printing devices that support countywide distributed printing, print-on-demand, electronic transfer of printed information, and the help desk service. Policy, Planning and Administration provides DIT administrative support functions and IT policy support and compliance oversight; E-government provides architectural direction, standards and strategic innovation for on-line applications and E-government technology programs including web, IVR, Kiosk and Social Media and information interoperability architecture. In addition, in FY2005, the Public Safety group was established to focus efforts on the integrating systems in public safety, and address homeland security, and regional collaborative and interoperability initiatives and mandates. Finally the Information Security Office reports directly to the Chief Technology Officer and has authority in monitoring, investigating, and compliance activities to ensure county IT assets are safeguarded.

The Department of Information Technology is charged with delivering quality and innovative information technology solutions that provide citizens, the business community and County staff solid technical capabilities that ensure the integrity of the County's information, service efficiency and convenient access to appropriate information and services. DIT embraces the following goals:

**Goal 1:** Deliver timely and effective responses to customer requirements through teamwork.

**Goal 2:** Provide vision, leadership, and a framework for evaluating emerging technologies and implementing proven information technology solutions.

**Goal 3:** Provide citizens, the business community and County staff with convenient access to appropriate information and services through technology.

**Goal 4:** Work with County agencies to improve business operations by thoroughly understanding business needs and by planning, implementing and managing the best information technology solutions available.

**Goal 5:** Guarantee a reliable communication and computer infrastructure foundation on which to efficiently conduct County business operations today and in the future.

**Goal 6:** Effectively communicate information about plans, projects, and achievements to County staff and customers.

**Goal 7:** Develop and maintain technically skilled staff competent in current and emerging information technology and a user community that understands and can employ modern technologies to maximize business benefits.

**Goal 8:** Ensure effective technical and fiscal management of the department's operations, resources, technology projects and contracts.

In addition to the Department of Information Technology's Mission and Goals, Fairfax County Information Technology (IT) projects and processes are guided by **Ten Fundamental Principles** adopted by the Board of Supervisors in 1996 and updated annually.

1. Our ultimate goal is to provide citizens, the business community, and County employees with timely, convenient access to appropriate information and services through the use of technology.
2. Business needs drive information technology solutions. Strategic partnerships will be established between the stakeholders and County so that the benefits of IT are leveraged to maximize the productivity of County employees and improve customer services.
3. Evaluate business processes for redesign opportunities before automating them. Use new technologies to make new business methods a reality. Exploit functional commonality across organizational boundaries.
4. Manage Information Technology as an investment.
   a. Annually allocate funds sufficient to cover depreciation to replace systems and equipment before life-cycle end. Address project and infrastructure requirements through a multi-year planning and funding strategy.
   b. Manage use of funds at the macro level in a manner that provides for optimal spending across the investment portfolio aligned to actualized project progress.
   c. Look for cost-effective approaches to improving "legacy systems". Designate systems as "classic" and plan their modernization. This approach will help extend investments and system utility.
   d. Invest in education and training to ensure the technical staffs in central IT and user agencies understand and can apply current and future technologies.
5. Implement contemporary, but proven, technologies. Fairfax County will stay abreast of emerging trends through an ongoing program of technology evaluation. New technologies often will be introduced through pilot projects where both the automation and its business benefits and costs can be evaluated prior to any full-scale adoption.
6. Hardware and software shall adhere to open (vendor-independent) standards and minimize proprietary solutions. This approach will promote flexibility, inter-operability, cost effectiveness, and mitigate the risk of dependence on individual vendors.
7. Provide a solid technology infrastructure as the fundamental building block of the County's IT architecture to support reliability, performance and security of the County's information assets. Manage and maintain the enterprise network as an essential communications channel connecting people to information and process via contemporary server platforms and workstations. It will provide access for both internal and external connectivity; will be flexible, expandable, and maintainable; be fully integrated using open standards and capable of providing for the unimpeded movement of data, graphics, image, video, and voice.
8. Approach IT undertakings as a partnership of central management and agencies providing for a combination of centralized and distributed implementation. Combine the responsibility and knowledge of central management, agency staff, as well as outside contract support, within a consistent framework of County IT architecture and standards. Establish strategic cooperative arrangements with public and private enterprises to extend limited resources.

9. Consider the purchase and integration of top quality, commercial-off-the-shelf (COTS) software requiring minimal customization as the first choice to speed the delivery of new business applications. This may require redesigning some existing work processes to be compatible with beneficial common practice capabilities inherent in many off-the-shelf software packages, and, achieves business goals. In consideration of this, it is recognized that certain county agencies operate under business practices that have been established in response to specific local interpretations and constraints and that in these instances, the institutionalization of these business practices may make the acquisition of COTS software not feasible. Develop applications using modern, efficient methods and laborsaving tools in a collaborative application development environment following the architectural framework and standards. An information architecture supported by a repository for common information objects (e.g., databases, files, records, methods, application inventories); repeatable processes and infrastructures will be created, shared and reused.
10. Capture data once in order to avoid cost, duplication of effort and potential for error and share the data whenever possible. Establish and use common data and common databases to the fullest extent. A data administration function will be responsible for establishing and enforcing data policy, data sharing and access, data standardization, data quality, identification and consistent use of key corporate identifiers.

In working with DIT, the **Department of Cable Communications and Consumer Protection** has several major areas that fit within the overall provisioning of information services County-wide:

**Communications Policy and Regulation** encourages competition and innovation in Countywide deployment of cable provider services; enforces cable communications legislation and franchise agreements; works with the Telecommunications industry to enable the development of cost effective network services for the public and ensuring a reliable means of mass communication of official information during public safety emergencies. This group works with the Department of Information Technology on a variety of initiatives and FCC regulatory activities that impact telecommunications services for County government managed by DIT.

**Communications Productions** provides award-winning broadcast productions for Fairfax County Government Channel 16, the public information channel, and the Fairfax County Training Network (FCTN). Channel 16 televises over 340 live programs that are also available by video stream, reaching an estimated 600,000 residents with information programming about County programs and services that serve the community. The division also operates an emergency messaging system for residents. This group is part of the E-Government channels and works with DIT in web-based video access.

The mission of **Fairfax County Public Library** system is to provide and encourage the use of library resources and services to best meet the evolving educational, recreational, and informational needs of all the Fairfax County and Fairfax City residents, thereby enhancing individual and community life. The **Library's Technology Vision** augments tradition library services with technologies that provide Fairfax County and City residents' access to electronic information resources locally, nationally and throughout the world. Library staff keeps pace with the rapidly changing environment and uses new technologies to assist patrons and improve service delivery. FCPL's goal is to remain flexible by maximize opportunities to improve services delivery through technology. Working with DIT, FCPL provides Public Access facilities in Libraries where the public can access the Internet through wired workstations and wireless services. The Library's goals for technology are:

- Provide County/City residents access to FCPL resources without constraints of time or location.
- Provide County/City residents access to world-wide electronic information sources.
- Expand access to local information through electronic means.
- Preserve and provide access to Fairfax County and Fairfax City historical documents and images.
- Ensure delivery of electronic library services to physically challenged residents.
- Manage FCPL resources to efficiently deliver library services to residents.

## Fairfax County's Regional and National Prominence in the IT Community

In carrying out its mission, the DCE and/or DIT participate on several key County Committees focused on major County initiatives or operational oversight agendas, for example:

- The Public Safety IT Governance Board
- Emergency Management Coordinating Committee
- Emergency Management Executive Committee
- Public Safety and Transportation Operations Center (PSTOC) Leadership and Executive Committees
- Legacy Systems Executive Committee
- Land Development Systems Steering Committee
- Court Technology Governance Board

Additionally, Fairfax County government's CTO and IT management provide leadership and/or participate on several federal, state, and regional committees including:

- Council of Governments CIOs Committee
- Council of Governments Emergency Preparedness Council
- Council of Governments Interoperability Council
- Regional Working Group for Interoperability (Maryland, Virginia, and DC state and local functional and technical leadership representation)
- Commonwealth of Virginia Interoperability Council
- Federal CIO Council
- National Association of CIOs
- National Association of Telecommunications Officers
- Virginia Local Government Information Technology Executives (VALGITE)
- Northern Virginia Regional Commission
- National Association of Counties
- Public Technologies Incorporated
- CIO Executive Board

In promoting technology in Fairfax County Government, DIT hosts several key events each year including:

- GIS Day where DIT conducts competition among County agencies for new application of the use of geospatial and related technology;
- IT Security Awareness Day, and annual event designed to bring in the latest intelligence in promoting employee awareness and knowledge about risks and responsibility in using technology at work and at home

Over the years, Fairfax County Government's IT organization, the Deputy County Executive for information departments, and the Chief Technology Officer/ Director of DIT, have earned numerous awards and recognitions, including:

- Fairfax County's public web site, fairfaxcounty.gov, earned top honors in the Center for Digital Government's "2007 Best of Web" awards competition. As first place winner, the County's web site was recognized as one of the most innovative and user friendly local government portals.
- Fairfax County was also ranked first in the Center for Digital Government's 2005 Digital Counties Survey and ranked in the top five for 2006. The Bertelsmann Foundation of Germany recognized the County's e-Government program in 2002 as one of the four top pace setters of the 12 top e-Government programs in the world.
- In the annual Public Technology Institute 2007-2008 Solutions Awards, Fairfax County was recognized for excellence in its e-Government initiatives.
- In 2007 Fairfax County was recognized as one of the top digital counties in the nation according to an annual survey by the Center for Digital Government and National Association of Counties.
- Fairfax County's Deputy County Executive was one of four state or local government officials to receive the 2003 Federal 100 awarded for work on e-government and geo-spatial projects. He was also among Computerworld Magazine's 100 Information Technology Leaders in January of 2002, and was recognized on Government Technology Magazine's 2002 list of "25 - Doers, Dreamers and Drivers of Information Technology" in US Government. He also was the recipient of Public Technology Institute's 2002 Technology Leadership Award for Large Jurisdictions.
- Government Technology magazine named Fairfax County Chief Technology Officer and Director of Department of Information Technology, as one of government's five most influential female chief information officers in 2007.
- In 2006 Computerworld magazine ranked the Fairfax County Government one of the top 100 places to work in IT in the US.
- The Deputy County Executive and Chief Technology Officer were named 2003 Public Officials of the Year by Governing Magazine.

## ENTERPRISE TECHNOLOGY GOVERNANCE

## 1.2 SENIOR INFORMATION TECHNOLOGY STEERING COMMITTEE

The Senior Information Technology (IT) Steering Committee was formed by the County Executive to provide oversight of IT policy and investments to ensure their alignment and support of strategic and operational business requirements. The committee monitors the entire IT project portfolio to continually assess whether the investments are providing expected benefits. This monitoring process provides a broad perspective from senior executives who independently and objectively evaluate and make decisions on the overall status, mission needs, and priorities for the County. The committee meets quarterly and reviews on-going project status in relationship to the County's strategic business initiatives. Additionally, the committee reviews and provides budget recommendations for new initiatives.

Members of the Senior IT Steering Committee include: the County Executive, Deputy County Executives, the Director of the Department of Management and Budget and the Director of the Department of Information Technology/CTO. The committee may activate a number of sub-committees around specific issues that would report back to Senior IT Steering. As part of the decision making process, the Committee presents and discusses strategic policy issues on behalf of the Senior Management Team which is comprised of all county department heads.

Members of the Senior IT Steering Committee include:

The County Executive, Deputy County Executives

The Director of the Department of Management and Budget

The Director of the Department of Information Technology/CTO.

The Committee may activate a number of sub-committees around specific issues that report their findings back to the Senior IT Steering Committee. As part of the decision making process, the Committee presents and discusses strategic policy issues on behalf of the Senior Management Team which is comprised of all County department heads.

## 1.3 E-GOVERNMENT STEERING COMMITTEE

The e-Government Steering Committee is a subcommittee of the Senior IT Steering Committee and was created to assist the Deputy County Executive for Information with e-Government policy and strategy decisions and ensure enterprise consistency and standards in regards to the County's e-Government Program.

Members of the Committee include:

Deputy County Executive – Chair

Chief Technology Officer, Director of DIT

Director, Public Access & Advanced Technologies, DIT

Director, Office of Public Affairs

Deputy Director, Office of Public Affairs – Communication

Director, Web Content – OPA

Director, Department of Cable Communications and Consumer Protection

Director, Fairfax County Public Libraries

The Steering Committee:

- Considers updates to the Public Web Site content Policy PM N0.13-04
- Creates additional e-Government policies and procedures as necessary
- Assists the Deputy County Executive in consideration of departmental requests for external links, exceptions to policy and the use of emerging e-channels
- Identifies e-Government related issues and ideas for discussion
- Sponsors periodic focus groups, surveys and other public or internal outreach to ensure that the e-Government program is meeting the needs of the County customers
- Investigates and adopts new e-channels- such as social media- to ensure that the County[s e-government channels and services meet the needs of the County's external and internal customers
- Initiates pilot projects and conducts after action review of the pilot project
- Recommends changes as necessary to e-Channels or adopts new e-Channels based on customer feedback
- Sponsors projects for inclusion in the County's annual IT Plan

## 1.4 INFORMATION TECHNOLOGY POLICY ADVISORY COMMITTEE

In 1998 the Board of Supervisors created a private sector group named the Information Technology Policy Advisory Committee (ITPAC) to assist the Chief Technology Officer (CTO) with technology direction and validation of trends. ITPAC meets on a regular schedule to review the County's technology posture and key projects, and the annual technology investment plan recommendation. ITPAC serves as advisor to the CTO, providing counsel, experience and support for the IT program.

ITPAC was created by the Fairfax County Board of Supervisors to provide the Board with a source of expert citizen advice regarding information technology strategy. The Board has committed itself to providing the County government with the resources necessary to keep pace with emerging trends in information technology; as well as providing citizens, the business community, and employees timely and convenient access to information and services through the use of technology; and using new technologies to create new business processes and improve government efficiency. To maintain these commitments, the Board has made substantial, continuing investments in information technology. The ITPAC Committee membership includes:

- One representative appointed by each Board Member (10 in total);
- One representative appointed by the School Board; and
- One representative from each of the following groups:
  - Fairfax County Chamber of Commerce
  - Fairfax County Federation of Civic Associations
  - League of Women Voters
  - Northern Virginia Technology Council

The Committee duties and responsibilities are:

- Keep informed regarding information technology, including telecommunications, developments and provide recommendations to the Board of Supervisors regarding technical improvements to be incorporated in the County computer and telecommunications systems.
- Review the annual Information Technology Plan and information technology budget and make recommendations to the Board of Supervisors.
- Review major information technology acquisition plans and makes recommendations to the Board of Supervisors.
- Bring facts and issues that it deems important to the attention of the Board of Supervisors.
- Undertake such other activities as become appropriate as information technology changes.

# SECTION 2
## STRATEGIC DIRECTIONS AND INITIATIVES

# STRATEGIC DIRECTIONS AND INITIATIVES

## FEATURED IN THIS SECTION

# SECTION 2
# STRATEGIC DIRECTIONS AND INITIATIVES

The most critical challenge facing technology providers is to stay current with the rapid pace of change in technology while harnessing innovations effectively to promote an organization's strategic goals, optimize service efficiencies, and successfully meet end-user and public expectation. Advances in technology facilitate the delivery of better and faster service at a reduced cost. However, investments in technology are expensive and incorporation into an organization's business complex. New technology must be adopted carefully and integrated wisely into the existing technology infrastructure of an organization so as to minimize operational disruption and maximize the benefits in a cost-effective manner. The following nine strategic initiatives address the County's objective of providing effective, efficient and customer-oriented access to data and services for both constituents and internal government customers on an enterprise scale.

## 2.1 E-GOVERNMENT

The e-Government initiative is a foundational program supporting the County's goal of a "*government without walls, doors, or clocks*". The comprehensive strategy uses enabling technology, policy and processes that integrates the Fairfax County Web Site www.fairfaxcounty.gov, Kiosks, Interactive Voice Response (IVR) platforms, and incorporates Cable TV platforms, the County's Public Access sites in Libraries and Access Fairfax sites, and the County's Communications Plan for comprehensive and cohesive access to information and services that span over fifty agencies services. In addition to the on-going efforts to enhance the look, feel, navigation and search capabilities of the Web, and deploying new services and transactions, the strategy incorporates CRM and Content Management tools for wide-ranging service options. The County has achieved much success and acclaim for its e-government focus in integrating the WEB, IVR and Kiosk platforms offering a variety of channels for on-line services for a complete public access capability to services and programs. In FY 2009, the County will continue its efforts to add new services to the e-government channels, including new transactions and e-payments and enhanced search. The e-government program will also continue to work with the Commonwealth of Virginia, regional partner municipalities, and federal government agencies in interoperability of common service portals and developing web services standards which will enable cooperative access and seamless integration of information for presentation of information and services regardless of the origin or the source.

Major FY 2008 accomplishments for e-Government initiatives included new applications such as Special Needs Registry, Social Needs Registry and Library Audio Books. The County will expand offerings in mobile access by making the County's public website accessible via wireless devices www.fairfaxcounty.gov/mobile which will allow citizens to interact with the County government through personal wireless devices. Additionally, a new kiosk was located at the Fairfax County Department of Housing and Community Development, and the County continues to work with Homeland Security on regional interoperability initiatives to establish policies, procedures and protocol for data exchange in support of emergency planning and response.

Sharing has become an integral part of the Web experience. It is often referred to as online collaboration, and is now also known as Web 2.0, social networking or social media.

A few examples include wikis (community developed reference material), podcasts (subscription-based audio information), RSS or Really Simple Syndication feeds (subscription-based information), Second Life (virtual reality) and MySpace (social networking). The wide spread use of Web 2.0 in social networking enables wide spread collaboration and information sharing, and enables individuals to rapidly share news and opinions worldwide.

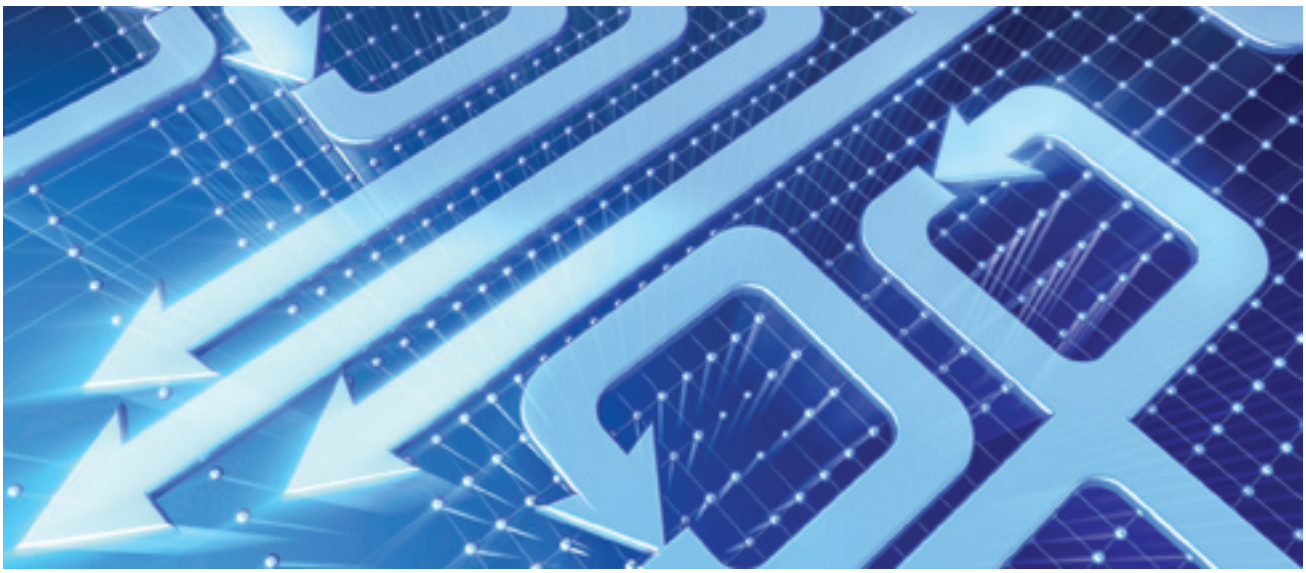
Through e-Government initiative, Fairfax County Government uses enabling technology to provide a "government without walls, doors, or clocks". Thus far, efforts have largely been focused on providing access to services. However, services are only part of the relationship between citizens and government. Fairfax County is expanding its efforts to provide citizens the necessary tools for interaction and participation with County government in order to improve communication and services (Citizen-to-Government Networking).

Many tools will help interested citizens learn more about the County's operations, programs, and activities. The County has long made it possible for people to subscribe to information that is published through e-mail (http://www.fairfaxcounty.gov/email/lists/), and is increasing the breadth of information available through various e-channels. The County provides RSS feeds (http://www.fairfaxcounty.gov/rss-feeds/), which allow users to have information sent to them through tools explicitly designed to track published information. The County continues to expand access to information through County podcasts (http://www.fairfaxcounty.gov/podcasts/).

Three county-wide pages have been launched on leading social networking sites: Facebook (http://www.facebook.com/group.php?gid=7901829756 – account required), MySpace (http://www.myspace.com/fairfaxcountygovernment), and YouTube (http://www.youtube.com/user/fairfaxcountygov). Posting content on these sites (which reach millions of people) allows the county to reach an expanded, and potentially younger, audience than it has in the past. The Office of Public Affairs maintains the content for these sites, which is often repurposed from existing material.

The County's Get Fairfax County campaign (www.fairfaxcounty.gov/getfairfax), consolidates all the ways residents and employees can stay connected with the county, including: the social networking sites, information available on 703-FAIRFAX, News to Use, e-government services, podcasts, RSS feeds, Weekly Agenda and emergency alerts.

FY 2009 goals include expanding the use of Citizen-to-Government Networking by offering Moderated Discussions for key County initiatives. While more content will be developed for already supported channels, efforts will be focused on developing policies and procedures for publishing County information, making services available through shared sites in the public domain to reach a broader audience, and delivering content and services through additional channels. Building new e-service transactions and e-payments, continued improvements for navigation, improved synchronization of content from disparate sources, addition of enhanced interactive features to the WEB site to expand and improve applications such as a Special Needs registry supporting emergency response situations will remain a strategic focus. In addition, DIT will continue enhancements to the e-Government channels for compliance with Section 508 for accessibility; and maintain the ultimate goal of facilitating the delivery of integrated and accurate information to citizens via multiple platforms along with implementation of additional web search capabilities.



## Customers Served

**Kiosk:** more than 10.8 million "Screen Touches" to date
**IVR:** 4 million since FY 2005
**Web:** 52,445 visitors per day, more than 1,600,000 visits per month

## Information and Services Available

Adult education classes ..... *Web*
Becoming a child-care provider ..... *Web, Kiosk*
Board Meeting minutes (searchable) ..... *Web, Kiosk*
Budget information and approved budget ..... *Web*
Bus tour schedule ..... *Web, Kiosk*
Child-care provider list ..... *Web, Kiosk*
Collection of household trash & recyclables ..... *IVR, Kiosk*
County Code – full text ..... *Web*
County demographics ..... *Web, Kiosk*
County maps, scrollable, printable ..... *Web, Kiosk*
Courts - Circuit, General District, and Juvenile ..... *Web, Kiosk, IVR*
Crime statistics, Wanted List, Neighborhood Watch ..... *Web*
DTA EPay ..... *Web*
DTA Tax Evaders
HIPAA
Institute for Earl Learning Training
iCARE DTA Real Estate Assessment and Information Query ..... *Web*
Library Graded Reading Lists
Library Picture Books
Offsite ..... *Web*
Public Meeting Calendar
Community Emergency Alert Network System (CEAN)
Fire & Rescue Media Information ..... *IVR, Kiosk*
Health information ..... *Web, IVR, Kiosk*
Housing information ..... *Web, IVR, Kiosk*
Inspection scheduling status ..... *IVR, Kiosk*
Information for victims of crime ..... *IVR, Kiosk*
Job opportunities ..... *Web, Kiosk*
Library information line ..... *IVR*
Multi-jurisdictional information ..... *Kiosk*
My Neighborhood
Newcomer information ..... *Web, IVR, Kiosk*
Parks/Recreation information ..... *Web, IVR, Kiosk*
Public safety information ..... *Web, IVR, Kiosk*
Real estate property assessment & tax information ..... *Web, IVR, Kiosk*
Seniors information and programs ..... *Web, IVR, Kiosk*
Frequently Asked Questions ..... *Web, Kiosk*
RSS Feeds ..... *Web*
Podcasting ..... *Web*

## Doing Business with the County

Access Health Department food inspections database ..... *Web*
Access GIS aerial photography with pan and zoom ..... *Web*
Apply for County jobs ..... *Web, Kiosk*
Apply for a library card ..... *Web, Kiosk*
Board of Supervisors compliant forms ..... *Web, Kiosk*
Building Permit Fee Estimate ..... *Web, Kiosk*
Directly connect to County staff ..... *Kiosk*

Download request for proposal/invitation for bid ..... *Web*
Electronic Mailing List ..... *Web, Kiosk*
Estimate Electrical Permit Fee ..... *Web, Kiosk*
File complaints about landlord or consumer problems ..... *Web, Kiosk*
Find location of closest Library by entering zip code ..... *Web, Kiosk*
Register & pay for Park Authority classes, camps, & tours ..... *Web, IVR*
Library Audio Books ..... *Web*
Locate facilities and public transportation ..... *Kiosk*
Obtain permit/plan status ..... *Web, IVR, Kiosk*
Pay taxes with credit card ..... *Web, Kiosk*
Pay taxes via eCheck ..... *Web*
Pay traffic tickets with credit card ..... *IVR, Kiosk*
Query current real estate property & tax information ..... *Web, IVR, Kiosk*
Query Human Services online "Resource Guide" ..... *Web, Kiosk*
Query for current position on the Housing Waiting List ..... *IVR, Kiosk*
Query specific court case information ..... *IVR*
Query status of an inspection, permit, or plan ..... *Web, IVR, Kiosk*
Query Victim Services data for offender release date info ..... *IVR*
Register a vehicle ..... *Web*
Request faxes of court fees and procedures ..... *IVR, Kiosk*
Renew vehicle registrations ..... *Kiosk*
Reserve a golf tee time ..... *Web, Kiosk*
Reserve/renew Library books – search catalogue ..... *Web, Kiosk*
Reserve a picnic area ..... *Web, Kiosk*
Report change of address for tax purposes ..... *Web*

| | |
|---|---|
| Report a lost pet | *Web* |
| Report a zoning or noise ordinance violation | *Web, IVR, Kiosk* |
| Search for information in historical newspaper | *Web* |
| Search for Health Department clinics by area of County | *IVR* |
| Search for County agency telephone numbers by keyword | *IVR, Kiosk* |
| Special Needs Registry | *Web* |
| Sheriff Service Civil Process | *Web, Kiosk* |
| Subscribe to County publications | *Web, Kiosk* |
| Social Needs Registry | *Web* |
| Volunteer to help in the Library or Parks | *Web, Kiosk* |
| Zoning and Noise Ordinance compliant form | *Web, Kiosk* |
| Athletic Facilities Application Requests (AFAR) | *Web, Kiosk* |

## 2.2 ENTERPRISE CONTENT AND DOCUMENT MANAGEMENT

The County established a strategic approach to content and document management by developing an integrated solution on an enterprise platform. Content Management is the foundation for the organization and use of information from structured data (through business applications), and unstructured data in electronic or imaged documents (word processing documents, spreadsheets, e-mail, and reports).

The County continues to develop an enterprise information architecture which frames this plan and becomes a tool for web services, applications development, and web static page content search and navigation. Since many government processes still require paper records, necessitating the storage of large volumes of paper over prolonged periods of time, the solution includes a rich document management capability to allow for more efficient flow and storage of vast quantities of required paper records. The enterprise document management technology with incorporated workflow solution improves business process efficiency and productivity by providing the capability to view hard copy records through automated applications in order to provide required services. In addition to fast and reliable business processes, the document management solution minimizes the need for storage of paper records, reduce storage space needs, protect against mounting storage costs, and reduce human and physical plant asset risks associated with handling voluminous units of paper.

Business Reference Model (BRM) is the basis for data classification that aligns with three business areas: Service to Citizens, Support Delivery of Services and Internal Operations and Infrastructure. These areas are subdivided into thirty-five separate lines of business which cut across all agencies. BRM provides the foundation for Enterprise Information Architecture and allows for data integration across lines of business within the County. BRM serves as the foundation of a more exhaustive Taxonomy of Services under development for the County. When combined with other metadata, this taxonomy facilitates improved search and classification capabilities across application data and static content. The classification of data is the first and most important step in correctly implementing an Enterprise Content Management System.

In addition to continued work on the Information Architecture and implementing *Documentum's* Content Management System, the following has been accomplished:

- Classified the variety of information types currently offered on the Web Site
- Implemented workflow processes and define requirements for contributing content to the County's Web site
- Piloted delivery platforms for Mobile Content (i.e. Wireless "Contact Us" )
- Developed an XML Document Model and Metadata associated with static content
- Implemented the Technical Architecture for Content Management
- Continued work on the Information Architecture including:
  - the "Taxonomy of Services" for the County
  - the Inventory of Systems classified by Lines of Business

  - development of an XML Namespace for the County
  - development of repositories for storing XML Objects
- Developed the template and methodology for agency web files that are currently on the County's Web site

FY 2009 goals for Integrated Content and Document Management include:

- Convert the content of WEB files to XML for County agencies current pages
- Continue XML content migration to Web, Kiosk and Mobile platforms
- Build new XSLT templates based on content classification ( increases the ability for custom look and feel for special content requirements such as news releases)

Content management integrates with document management. For business activities that also rely on a variety of documents, the document management initiative employs technology at the beginning of a document's life cycle (originated as hard and soft copy) using the system to catalogue and track the documents and enable automated workflow processes through the entire life cycle. This comprehensive approach and associated implementation of technology is called Integrated Document Management (IDM). Through research and analysis conducted in 2004, the County found that best in breed products for content management engines also incorporated document management needs. The integrated solution is more cost-effective, and provides a seamless integration for use of information found in imaged documents and information in databases and other systems required for a complete business transaction. IDM technology provides the ability to organize electronic documents, manage content, enable secure access to documents, route documents, automate related tasks, and facilitate document distribution.

Another component of IDM includes document imaging, which will continue to play a much larger role in the County's business environment. Despite e-government efforts, many business processes remain dependent on paper documents. Often due to legal mandates, many government processes remain paper-intensive, and require agencies to store large volumes of paper for extended periods of time. Consequently, many County agencies are exploring technical solutions to alleviate the demand for increased storage space, improve business processes, and protection against disasters that can potentially destroy volumes of important paper documents. Integrated Document Management solutions encompass core business practices, as well as provide better archival and disaster recovery capabilities.

In FY 2007, the County implemented IDM technology for document work flow projects in the Office for Children, initiated work for the Juvenile and Domestic Relations District Court, began multiple initiatives for the Department of Family Services, and continued work in the Commercial Inspections Division of Land Development Services in the Department of Public Works and Environmental Services to meet the needs of the sewer lateral section. Analyses were conducted in the Department of Finance for an automated Accounts Payable imaging system, and for integration with the Commonwealth of Virginia systems for the Department of Family Services.

Although the individual departmental business requirements vary for the use of IDM technology, the following benefits and quality improvements have resulted from these projects:

- Increased staff productivity from employees ability to share and act on accurate information through the delivery of the right documents at the right time
- Enhanced communication and collaboration through shared information
- Improved speed of information and transaction flow throughout county agencies
- Improved access and security through controlled access to sensitive documents
- Reduced time spent searching for critical documents
- Improved disaster recovery through electronic storage and backup of information that is far more secure than paper
- Reduced clerical, paper, printing and storage costs

In FY 2009, the County will implement the IDM solution for the Department of Housing and Community Development, and expand the electronic accounts payable solution for the Department of Finance.

Program plans include continued initiatives to implement IDM and workflow technology for projects in the Department of Family Services, Office for Children, the Juvenile and Domestic Relations District Court, the Clerk to the Board office, and the Department of Planning and Zoning. The program will also ensure development of a robust and scalable infrastructure "core" that can incrementally grow over time to meet future needs.

Document management and imaging projects, especially when work flow automation is used, can greatly improve operational efficiency and effectiveness. In addition, these projects deliver enhanced information security. Granular control over each piece of data enables access by authorized users, and only for the specific information they need and are authorized to access. These solutions provide business units with the capability to reduce costs, accelerate business transactions, ensure regulatory compliance, and support cross-department communication.

## 2.3 CUSTOMER RELATIONSHIP MANAGEMENT (CRM)

Expectations for easy access to government services continue to expand dramatically. Citizens look for ways to interact with their government through channels that best suit their needs. Fairfax County continues to respond to this growing need through the implementation of Customer Relationship Management (CRM) technology applications. CRM provides agencies and their staff improved opportunities for providing citizens quick and convenient access to information about County programs and services.

In earlier adoption of technologies to enhance tracking and response to citizen inquiries, *Internet Quorum*' (IQ), and '*IPhinity*' call distribution technologies were successfully implemented and proved beneficial to both constituents and County offices and agencies. Significant staff productivity and efficiency improvements were achieved in supporting information exchange with citizens through multiple communication channels: in-person, telephone, e-mail, web, and Kiosk. Successful implementation in the Offices of the Board of Supervisors and the Clerk to the Board provided enhanced opportunities to record, route, and manage interactions with constituents and organizations, and subsequent phases provided expanded capability throughout the County. The Web enabled system '*Internet Quorum'* (IQ) replaced several obsolete custom applications and provided the expansion of IQ to Office of Public Affairs, Consumer Protection, Human Rights office, Department of Public Works and Environmental Services, County Executive and the County's Legislative function within the County Executive's office, Department of Purchasing & Supply Management, Department of Transportation and Alternative Dispute Resolution Program.

The Clerk to the Board of Supervisors uses the IQ Boards and Commissions module to track appointments and nominations to boards, committees, and councils and maintain a complete correspondence history regarding contact with these individuals. Consumer Protection Division's modules include Complaint Tracking, License Administration and Taxicab Inspections. The systems enable staff to rapidly open and begin investigating cases. By expediting the administrative components of case investigations, the initial response time was reduced, resulting in earlier detection of consumer protection violations. The historical research required to discern whether businesses are repeat offenders or not, and how past cases were resolved is now expedited; cross-referencing cases between investigators allows department staff to share online information pertaining to the same or similar consumer protection violations, and facilitates collaboration between department investigators on complaints and resolution techniques. The system also enables citizens to access complaint histories of businesses online in order to research and better determine the pros and cons of doing business with those merchants. In addition, the system allows Fairfax County Police access to license information for all solicitors, peddlers, pawnbrokers, massage therapists, taxi drivers, etc.

The Office of the County Executive uses the IQ Legislative Tracking Monitor application to assist County

agencies monitor, review, respond to and track state legislation when the Virginia General Assembly is in session. The system includes the automated downloading of legislative bill information from the Commonwealth's Legislative Information System, thus eliminating the need for a legislative aid to manually perform associated data entry tasks, and enhances county staff's ability to search for bills and comments quickly. The Office of Public Affairs also uses the IQ system and includes publications and brochure tracking and workflow. Other benefits include elimination of the cumbersome process of manually tracking constituent requests with a more efficient means of processing and tracking mandated Freedom of Information requests. The Human Rights Commission uses the system to create, track and report on case workflows allowing the HRC investigators to meet multiple requirements. The system also streamlines complex discrimination processes and addresses privacy concerns for investigator and conciliators.

The FY05 *'IPhinity'* call center distribution application implemented for Human Services Consolidated Services Planning (CSP) call center offers efficiency in supporting the growing number of people seeking assistance from social services agencies with limited staff geographically disbursed at various sites. '*IPhinity*' is customizable to route incoming contacts based upon selected criteria, set levels of access, record specialize voice promotes, manage calls based on specific business requirements, and track all interactions to ensure closed-loop resolution. CSP is able to monitor and manage workload and performance with a comprehensive set of analytical tools for real-time and historical reporting. Computer Telephony Integration (CTI), internal calls or transferred calls are presented to case worker along with a "screen-pop" of information from agency case systems and databases relevant to the citizen's call. This integrated approach provides CSP the opportunity to better develop relationships with citizens and more effectively focus resources to address their needs

Accurate call management, collaborative capabilities, and workforce management tools aid in access to legacy systems, reduce paperwork time, and increases employee productivity. Centralized control to all call center resources, estimated wait time, skills-based routing, virtual call center processing, self-service options, callback messaging, and emergency recording, are all standard features available in the easy-to-use system administrator management interface.

## Enhancements

Future enhancement of the County's CRM initiative include planning for enterprise 311 telephony and integrating existing Call Center applications for supporting several agency and cross agency business processes with the goal of facilitating citizen interaction with the County through a single, clear point of entry, eliminating the need to navigate through hundreds of telephone numbers to find the appropriate service departments. A virtual 311 Call Center will integrate existing call center assets, improve the citizen's communication and experience with Fairfax County Government and serve as the County's primary unified communication gateway for all residents and business. This single point of access between citizens and local government will standardize call taking operations and enable employees to answer citizen questions and log service requests. Call takers will be able to respond to a broad range of questions spread across multiple databases which ensure all call takers have the most current information at their fingertips, regardless of the source. Based on department business rules, call takers can process request for service or issues using the comprehensive and flexible workflow tool provided to integrate routing to appropriate staff members. Service level agreements and partnerships with appropriate state, federal, and private entities that are partners with the County in service delivery will be established to further meet the citizen service needs and increase confidence in government. Other modules will be added, including CRM analytics and integration of the County's Geographic Information Services (GIS), which supports the pinpointing of related complaints or contacts within a specified geographic area.

It is now a business necessity to integrate CRM technology applications and communication channels with a common interface to supply one-stop customer service and a single citizen view within the County. CRM technology applications improve service delivery to the citizens before, during, and after contact. An enterprise CRM application will consolidate citizen information and enable optimal service and rapid citizen response. Strategic alignment and integration of IT investment with IQ, *IPhinity*, and FIDO are the building blocks to support the usage of an enterprise case management and better inform the citizens and increase satisfaction. It will also provide greater visibility into the top concerns of constituencies; which enables agencies to proactively address local matters of interest and concerns, resulting in both service improvements and a reduced volume

of incoming inquiries. Integration of these systems that cross agency processes streamlines and creates transparency of actions that cross departmental silos and will facilitate cross functional teams like Code Enforcement, Foreclosure information, normal inspections, courts information, and others.

An enterprise-wide, automated, full function distributed CRM solution will organize the tracking and monitoring of communications, cases, contacts, events and complaints. It will offer a Web-enabled solution that will provide a robust, consistent foundation for managing all citizen relationships and support a knowledge-based, centralized repository of data allowing the County to leverage emerging technologies as it moves into a more unified messaging environment. Live help using a Web interface, such as instant messaging, will give users another method for receiving real-time support, and will incorporate multi-media and other forms of digital and wireless communications to improve the user experience.

Enterprise CRM supports a holistic view to aid in making well-informed decisions about service delivery to the County's diversified population and improvement of communication through seamless unified access of information via the County's web site, Kiosk, IVR systems, cable TV, in-person, as well a live 311 Agent. In FY 2007, the County awarded a contract to IBM for Siebel CRM platform. Initial efforts involved development of the overall framework and pilot application in the Office of Public Affairs which was successfully implemented in FY 2008.

The goal for FY 2009 is to continue implementation of CRM with expansion to other county agencies that have call center like processes or needs, with integration to enterprise and agency specific back-end knowledge systems such as FIDO, IQ and others. The CRM applications will be integrated with the County's new IP based telecommunications platform, AVAYA, which will enable screen pop interaction with case record information, contact interaction records and profiles, and transparent case escalation.

## 2.4 GEOGRAPHIC INFORMATION SYSTEM (GIS)

Fairfax County's GIS has continued its growth in the number of direct GIS users (now over 700) as well as thousands of indirect users, working with applications that now include GIS embedded as part of their operation. Some of these tools are available to the public via the Internet, as well as county staff on the intranet. FY 2008 saw the implementation of a robust intranet web GIS tool which enables agencies to better provide GIS capability to their staff thus increasing the number of GIS users and spatially enabled applications. GIS has assisted other agencies with integrating GIS with public web applications (e.g., LDS NET and FIDO). The expanded use of GIS technology enabled GIS branch to meet its goals for 2007-2008. Overall GIS usage by the public and by County staff increased as a result of heavier use of existing applications and introduction of new applications including the My Neighborhood Police Incident Viewer (see Figure 1). The Digital map viewer experienced increased usage with the addition of more property/zoning and other maps added for viewing/downloading via the internet. With the recent addition of historic property and zoning maps, complete sets of property maps dating back to 1961, and zoning maps dating back to 1986 are currently available for viewing.


***Figure 1: My Neighborhood – Police Incidents***

Over 27,000 pre-made maps and images of historic maps are currently available online. The volume available data in the GIS data warehouse continues to grow; the GIS data warehouse now holds over 600 layers of data. The overall size of the vector data has increased to 207 GB (including business data tables), and the raster data is now over 2.2TB on line and

an additional 3.5 TB currently archived that will be moved to production.

Vector data includes all of the data layers listed in Table 1 and is represented by points, lines or polygons. Raster data includes the digital imagery: raw photographs, orthophotos, and oblique imagery.

The volume of data within the layers has also increased. Table 1 illustrates some of the most significant layers and their 2005 - 2008 values, along with some additional values that only have recent data:

**Table 1**

| Data Layers | FY 2005 | FY 2006 | FY 2007 | FY 2008 |
|---|---|---|---|---|
| Parcels | 341,000 | 343,500 | 356,000 | 357,300 |
| Addresses | 360,000 | 365,000 | 368,000 | 364,700 |
| Building Outlines | 248,000 | 252,000 | 257,000 | 257,277 |
| Miles of Roads | 4,000 | 4,800 | 4,700 | 4,718 |
| Number of streetlights | | | 57,939 | 58,935 |
| Linear miles of sanitary sewer lines | | | 3,350 | 3,373 |

In FY 2009, the GIS branch will continue to increase the number of GIS enabled applications utilizing new web-based GIS tools, and further enhance existing web-based GIS applications (for instance My Neighborhood). GIS data will continue enhancements and improvements similar to achievements in FY 2007-2008 where the accuracy of the centerline data and its graphical representation were significantly enhanced. For example, GIS improved My Neighborhood adding watershed information to the search results. Together with the Police incident viewer, My Neighborhood serves over 20,000 maps per month. One month after being featured on the local TV evening news, over 60,000 total maps were served.

In consultation with other County agencies (e.g., transportation) and state agencies GIS developed a multimodal transportation model to handle roads, trails, rails, and waterway transportation. The data model is important for the new Computer Aided Dispatch system due for implementation in early 2009. That model will also supply data to other County operations. The intent is to have a single data store supplying all County centerline and transportation needs.

Figure 2 illustrates a draft of the updated logical data model.

In response to the Board of Supervisor's Land Use Accessibility Initiative, GIS has been working with LDS net and also investigating 3-D capability. GIS has obtained a 3-D model of a square mile area of Tyson's Corner and has ordered one of about three sq miles of the Herndon/Reston Dulles Toll road corridor. GIS is also investigating tools to enable development and web viewing of 3-D imagery. The intent is to implement a pilot by the start of FY 2009. 3-D work is labor intensive and places significant demands on a user's computer.

In response to a substantial increase in the use of GIS technology to support to Public Safety and Emergency Operations, two additional staff members were added to work directly on public safety related projects and data. The increased workload includes the need to enter preliminary parcel data into the GIS which increases data entry and editing. Substantial effort has gone into coordinating public safety agency initiatives to prepare for GIS integration into the new GIS based Computer Aided Dispatch system. This effort will continue beyond the system's implementation as GIS develops into an even more crucial tool to public safety operations.

The availability of key County data digitally through the GIS provides a range of benefits to constituents as well as County staff. The orthoimagery is widely used within GIS as well as over the web. Since the parcel and zoning data is now maintained digitally, production of the County's parcel and zoning books were greatly accelerated. Many time consuming manual steps were replaced with the digital production process enabling staff to capture additional

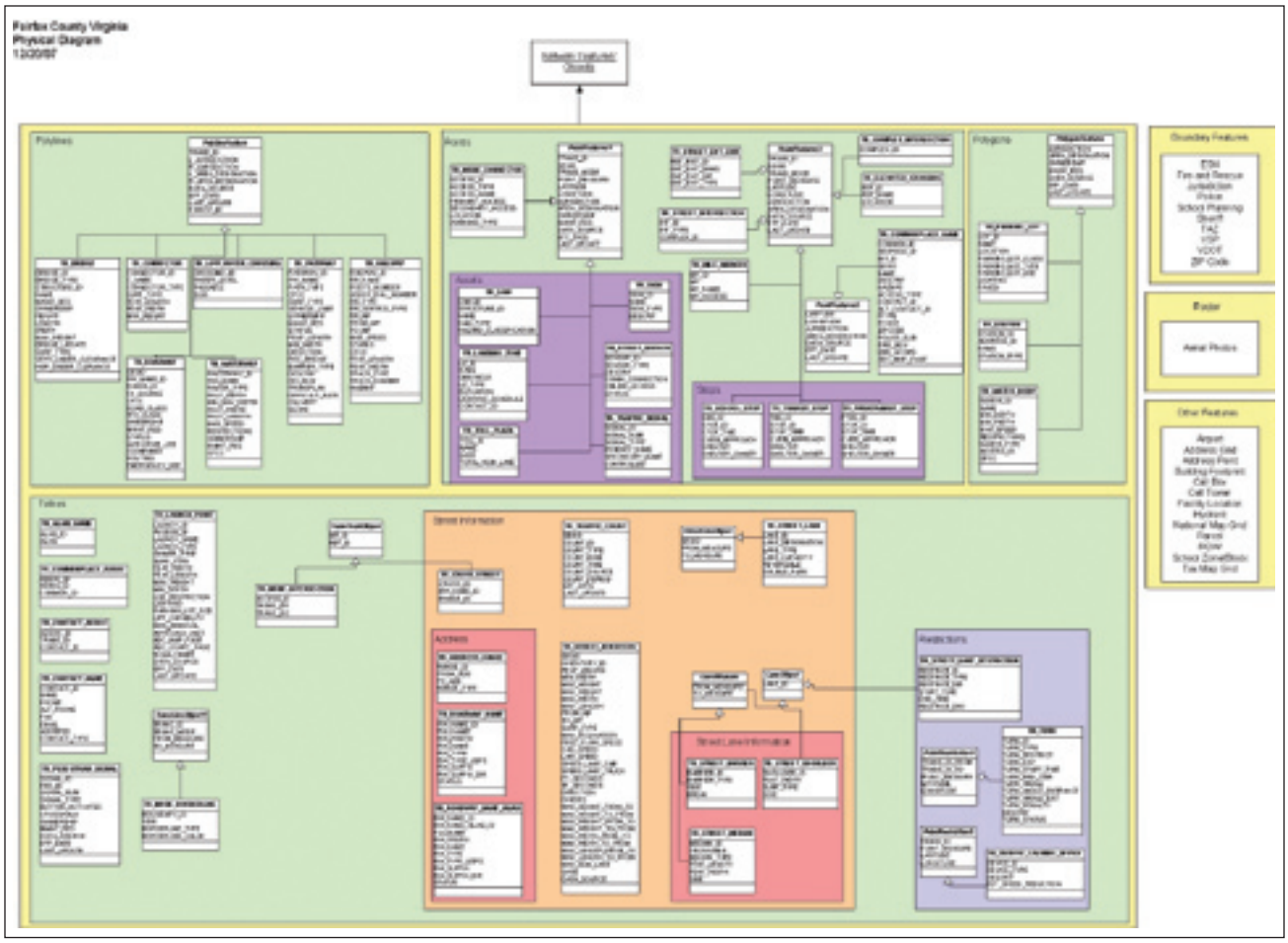


***Figure 2: Multimodal Transportation Model***

features in the GIS (e.g., more easements, particularly conservation easements). Additionally, map changes are posted to the internet daily, providing web users of the Digital Map Viewer with the latest versions of the maps. Prior to these enhancements maps were printed for distribution annually. Digital production has enabled the use of color in maps, and development of new symbolization of zoning patterns are added features. The popularity of the frequently updated data is evident by the steady increase in usage of the Digital Map Viewer.

The breadth of GIS utilization across the County, and the extent of its integration into the overall IT architecture are reflected in the award winning plans and efforts of the preceding years. The awards recognize GIS' achievement in fostering and expanding the use of GIS applications to improve County operations:

- The County's GIS program received a "Best of Breed" award in the 2003 Digital Counties Survey. This survey and award recognition was conducted by the Center for Digital Government, in partnership with the National Association of Counties.
- County GIS programs received the VA Governor's Technology award for DPWES' use of GIS in routing refuse collection vehicles.
- In FY 2005 the County's GIS won FOSE's E-Town Award for GIS Integration.
- Fairfax County's GIS received international recognition via the Environmental Systems Research Institute (ESRI) Special Achievement in GIS (SAG) Awards for both the GIS Branch work and the countywide efforts in GIS.
- The National Association of Counties recognized Fairfax County for its use of GIS in the reapportionment process.

In cooperation with the state's Virginia Base Mapping Program, aerial imagery of the entire County was updated in FY 2007. The state previously flew the entire

County in 2002. In the intervening years, the County independently flew the entire County and acquired ortho imagery of one quadrant per year. The Northwest quadrant was developed from aerial imagery flown in 2001; the Northeast from 2003 imagery; the southeast from 2004; and the Southwest from 2005. This completes the County's first orthoimagery update cycle. The state's plan to fly the entire County in 2006 was delayed until 2007 due to contractual difficulties, as a result there is no aerial imagery of the County from 2006. Oblique aerial imagery of the entire County was taken again in 2007 (previously in 2005 and 2003), delivered and brought online in FY 2008. Oblique imagery shows the sides of buildings, which orthoimagery does not. The side views enable County Assessors to more efficiently view and determine property values. The views also provide public safety officials with key information in planning emergency response, as they can see windows and doors to determine dimensions and heights above the ground.

To give a sense of the two different types of imagery, an example of each is included below. Figure 3 is an orthoimage, taken directly over the homes, while Figure 4 is oblique, taken from the side rather than directly overhead.

In FY 2008 updating of the planimetric data was initiated. A Statement of Work was issued to request proposals to update approximately 25% of the County. This is a jointly funded project between DPWES and DIT, the intent is to update 25% of the County annually, ensuring that the planimetric data will be no more than 4 years old. This data has been requested by EQAC along with a number of County agencies, and will be a foundational component of the new Computer Aided Dispatch system's maps. The underlying GIS hardware and software architecture was further enhanced, the Oracle-SDE data warehouse SAN space migrated to a new SAN, and the SDE and Oracle software moved to the enterprise SUN server. Failover capability for Oracle and SDE were added, and the Citrix servers were upgraded to the latest version of Citrix (4.5). GIS moved the database and Citrix servers to the latest release of ESRI software (9.2) after extensive testing and reprogramming.

The Master Address Database project has successfully concluded. The Master Address Repository (MAR) is now online and available for direct search and integration into other applications. It is the authoritative source of parcel addresses for the County (It does not include business suite or apartment unit values since there is no County process to track them). Web services were developed to greatly simplify application's ability to link to the MAR to obtain parcel address data. Several other systems now link to the MAR including the My Neighborhood application and several internal applications such as IQ and FIDO. The MAR now holds almost 365,000 scrubbed parcel addresses for the County. Phase II of the MAR was initiated by developing an interface between MAR and the Real Estate database (IAS). Since the vast majority of County data is about a specific location within the County (approximately 80-90 percent of municipal data are locational), it is important to ensure that the data can be linked to the GIS in order to take advantage of "place-based reasoning" and analysis. The most common locational link is parcel address. The MAR provides current and correct parcel addresses to all County agencies. It standardizes the address format and simplifies linkage to address by making the data available on an enterprise server using County standard RDBMS.

***Figure 3***

***Figure 4***

The GIS Branch continues to provide County employees support via the DIT Technical Support telephone numbers. In FY 2008 and into FY 2009 GIS will be working with the County demographer to prepare for the 2010 census. The initial work involves identifying and providing a list of all residential addresses in the County to the Census Bureau. Subsequently Census will compile a list for the County that must be reviewed and which becomes the basis for the 2010 Census visits and mailings.

### Administrative Efficiencies and Service Quality Improvement

Over 25 County agencies use GIS to in their operations, including the GIS Branch itself. These include:

- The transition to digital property and zoning information now enables the GIS Branch to maintain these maps daily. These maps are processed and made available for County staff and public users via the web. Since the production process is digital, more map series can be easily added. In FY 2008 the soil series will be added to the digital map viewer. In FY 2009 the new soil data based on the countywide soil evaluation program conducted jointly with the federal Natural Resource Conservation Services and the Northern Virginia Soil and Water Conservation District will be added to the digital map viewer.
- The centerline file was modified to reflect the Northern Virginia common centerline elements and made available to County agencies and will be enhanced with the multi-modal transportation model which is now complete.
- Substantial savings are realized in the Department of Public Works and Environmental Services through the use of GIS. The agency was recognized by the State of Virginia for integrating GIS with refuse vehicle routing for additional flexibility and cost savings.
- GIS technology enabled the Department of Public Works to complete the mapping involved in the Streams Characterization Project in weeks rather than months.
- The Department of Public Works digitized the sanitary sewer lines into the GIS and maintains them regularly. Storm sewers digitization was completed and is now in the GIS data warehouse. The data is also available in the My Neighborhood application.
- The Department of Zoning is digitizing the Comprehensive Plan into the GIS for easier maintenance and viewing. The agency uses GIS in the urban design project for Tysons Corner; and has performed 3-D visualization work to better understand the proposed developments.
- The GIS now contains data from Fairfax Water and the City of Fairfax on hydrants and water mains.
- The Department of Transportation uses GIS to help plan pedestrian safety projects.
- The Health Department uses GIS to conduct emergency preparedness planning.
- The Park Authority uses GIS for a wide range of planning and management activities.
- Oblique and Ortho imagery are now available to 911 dispatch personnel, adding improved response evaluation since operators can view actual conditions prior to units arriving.
- The Department of Planning and Zoning staff uses GIS programming and analysis to tackle problems that would have ordinarily been overwhelming manual tasks. Such tasks include assignment of regional transportation analysis zone numbers to each of Fairfax County's 356,000 individual parcels. GIS programming now makes this a routine and quick process. GIS is streamlining the Area Plan Review (APR) through the use of a new Comprehensive Plan Amendment Tracking System (CPATS). In addition, GIS is used with CPATS to generate notices for plan amendment applications. User errors were largely eliminated and the latest information is always used. GIS is integrated into DPZ's Land Information System (DPZLIS), the Staff Report Locator Map Production System module of DPZLIS is used to quickly create staff report maps. Environmental planners use DPZLIS to generate environmental assessments of LDS or APR application subject areas. DPZLIS is also used widely by staff to generate custom page size maps of any location in the County. These products have been especially beneficial in Zoning Enforcement issues; public users can now check on the status of permits for development and view maps of the work via the internet.
- The Department of Transportation employed GIS technology for a variety of projects and analyses. GIS provided tremendous insight in understanding and predicting commuter use of Park

& Ride facilities and helps direct the department locate and manage new/potential facilities. In addition, Department of Transportation uses GIS technologies for the Fairfax Connector bus system's demographic analysis, route planning, and bus stop management. Many of these techniques are also used for the Employer Services program to best promote commute alternatives to Fairfax employers and their staff.

- In health areas, GIS was used as part of the West Nile Virus planning and response, as well as tracking tuberculosis in the County. Previously GIS had proven its value in the canker worm outbreak in FY 2001 (and before that the Gypsy Moth outbreak). GIS enabled County staff to quickly identify residents who would be affected by planned canker worm spraying and contacted them ahead of time. The GIS also provided spraying coordinates to the helicopter spray crews so that balloons would not have to be used, which was a significant time and cost savings. Drinking water wells have also been identified and entered into the GIS.
- The Fire and Rescue Department (FRD) makes substantial use of GIS and as a result is experiencing significant savings. For instance, in the process of responding to Fire Hydrant and Insurance queries, the GIS saves about 50 percent in staff time determining the distances. A new Web application under review will provide even more savings once it is developed and online. Additionally a 98% staff time savings were estimated in the countywide analysis of the process of identifying the five-minute response time areas for fire stations — a factor crucial to establishing response areas that are within response time limits.
- The Police Department has had significant success in its use of GIS in crime analysis. In multiple instances, the Department's crime analysts were able to identify spatial patterns in crime incidents and successfully predict the subsequent crime locations. In those instances suspects were arrested. Police now train some of their crime analysts as criminal profilers, an activity heavily dependent on the use of GIS.
- GIS was used extensively in planning for and responding to flooding in the Huntington area. These maps were helpful for both field personnel and staff in the Alternate Emergency Operations Center.

The GIS Branch continues its strategic interaction with County agencies to foster their development of GIS capabilities and integration into their business processes. The preceding years have seen GIS take root in most County agencies. The program will continue to expand and is an important tool for Homeland Security and Emergency Management efforts. The challenge is to continue fostering, broadening and integrating growth with management involvement and support.

The GIS Branch is also pursuing a number of strategic activities to foster the sharing of GIS data and resources, particularly in the area of homeland security. The County is a member of NACo's GIS committee which looks at key GIS issues affecting counties. The County's GIS manager is a member of the Council of Government's CIO's GIS subcommittee, working on regional interoperability initiatives including development of a regional GIS map, tying the GIS layer with a regional data exchange hub, and pursuing projects and funding to enhance regional GIS.

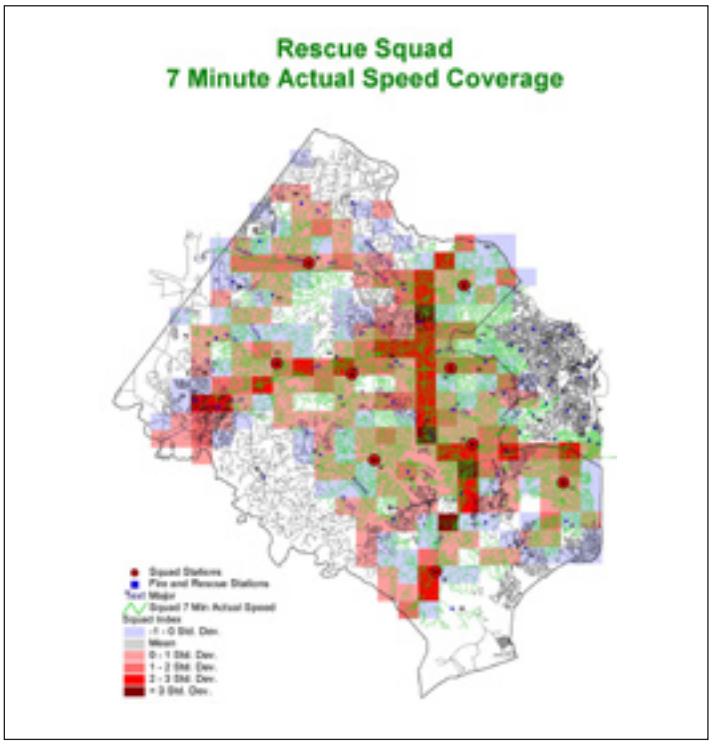
Fairfax County is a member of the Northern Virginia GIS managers group, an informal group that regularly meets to coordinate activities. The most recent accomplishment is the development of a regional centerline file structure that became part of a state wide centerline file project and which will be augmented with the results of the multimodal modeling work underway. The GIS Branch works closely with the State's GIS agency (Virginia Geographic Information Network, now part of Virginia Integrated Services Program), and now directly participates in the Emergency Operations Center when it is activated. In addition, the GIS Branch completed development of the My Neighborhood Police Incident viewer, and is working with the Police Department to develop a web-based incident mapping application which enables police to easily view detailed up to date incident statistics and locations internally. This internal application will have security to protect sensitive data.

Additionally, there will continue to be emphasis on data quality, system reliability and connectivity as well as implementation of new GIS applications. These aspects are crucial to implementing GIS as a data "utility" across the County so that users at any of the County's offices can "turn on" their GIS "data tap" and have all of the data they need available immediately. Data quality is a paramount issue; rigorous Quality Assurance/Quality Control measures have been implemented on the parcel data updates.

Similarly, rigorous quality standards were developed for the aerial imagery being acquired. System reliability is an increasingly crucial issue as more users integrate GIS into their daily operations. To ensure that the technology is available, the GIS Branch has procured additional servers, file storage and software to provide redundancy. The GIS Branch monitors the performance of its applications while the DIT's Technology Infrastructure Division monitors the underlying hardware and communications links to ensure reliability. Critical applications are monitored around the clock and staff is on call if system outages occur outside of work hours.

System connectivity is essential for thorough integration of GIS into County operations. It involves establishing robust, reliable and preferably real-time links between the GIS data warehouse and other vital County databases like the IAS Real Estate System, the Land Development System (LDS) and others. GIS staff will work closely with other agencies such as the Department of Tax Administration and the Department of Planning and Zoning to ensure optimum connectivity between the GIS data warehouse, the Master Address Repository and their operations as well as with DIT to help provide sufficient bandwidth for GIS to offices that have a need.

Finally, as the GIS Branch works closely with other agencies, web-based applications will be used wherever possible, staff will design and implement specific applications to enable users to more easily perform the spatial analysis and querying they need with GIS data. These custom applications will decrease the time necessary for queries and increase the number of staff that can use the data in applications designed specifically for their operational requirements.



## 2.5 FAIRFAX INSPECTIONS DATABASE ONLINE (FIDO)

The Fairfax Inspections Database Online (FIDO) project (formerly known as ISIS Replacement) is a strategic initiative to consolidate inspection services provided by multiple County agencies into a single software solution and to implement e-permitting capabilities for customers. The system enables all user agencies to work more collaboratively in their inspection and code enforcement efforts. This multi-million dollar, multi-year project connects four agencies in providing permitting, plan review, inspection, complaints management, and environmental health related services. Goals for this project include migrating from the mainframe environment to a platform that enhances multi-agency access and participation in the affected processes, enhancing customer service by streamlining the permitting process, and facilitating the performance of as much business as possible via the Internet. The new system will provide online permitting, facilitate enhanced plan review capabilities, integrate with the GIS to capture and present data in a graphical format, integrate with the existing Land Development Systems' (LDS) database to ensure the seamless availability of land development data, and provide a virtual one-stop shop for processing permit applications.

The approach for this project represents a concerted effort to harness the expertise of all stakeholders in the design, acquisition, and implementation phases to ensure a seamless, streamlined integration with all other pertinent systems. A project steering committee is comprised of the Chief Technology Officer (DIT Department Director), Department Directors from the FIDO user agencies, and the Deputy County Executive(s). In addition, teams of representatives from each of the core user agencies and the Department of Information Technology (DIT) have been established to assist in the management of this effort and for the coordination of gathering system requirements from the stakeholders. Customers and County staff that use the system on a daily basis formed numerous workgroups to provide critical input for the development of the user and system requirements. Additionally, these workgroups included staff of the Health Department, Department of Tax Administration, Fire and Rescue Department, Department of Planning and Zoning (DPZ), Department of Public Works and Environmental Services (DPWES) and DIT. The collaborative efforts of these groups provided input on the needs of all the beneficiaries, with a concentrated focus on the day-to-day customers and the numerous organizations that rely on the County for permit processing and inspection information. Many of these teams continue to work on the configuration and implementation of the system.

The FIDO system creates adaptability on a new platform that will serve as the foundation for all future e-permitting enhancements while providing immediate additional functionality and a streamlined process. The project will include the acquisition of a web-enabled system with the capability to provide access to permit information and the permit process 24 hours a day, 7 days a week and the availability of real-time wireless inspection results. The system will provide a virtual one-stop shop offering e-permitting opportunities for many projects not requiring plans. The system will also provide managers the ability to perform an ongoing analysis of efficiency and effectiveness of resource utilization.

Anticipated future enhancements to the new system include the, distribution and review of plans and permit applications by all required review agencies and the issuance of permits online for complex projects requiring the submission of large scale plans. The completion of this project will position the County to utilize additional e-government capabilities and will more fully integrate all of the land development processes to facilitate information sharing and one-stop permit processing. While enhancing customer service, this project will allow greater and immediate public access to permit related data, which in turn reduces customer inquiries and saves significant amounts of staff time. The management of the land development process will be enhanced by the ability to track construction projects throughout the project lifecycle. The consolidation of related data into a single system will improve the process as well as the consistency and reliability of information provided to customers. Finally, the vastly improved search and retrieval capability will facilitate research by the public and the County.

The early stages of this effort focused on the collaborative development of a comprehensive Request for Proposal (RFP) to procure an appropriate solution for the e-permitting system and to replace the multiple stand-alone inspection related databases being utilized by the Fire and Rescue Department (FRD), as well as the functionality required to manage complaints for the Department of Planning and Zoning

along with ISIS. In FY 2003, a comprehensive review of vendor proposals — including both custom solutions and COTS packages was completed. The review process included the formation of Selection and Technical Advisory Committees (SAC and TAC) that involved representation from all key user agencies as well as from the DIT. From this process, the Hansen, Inc. solution was selected. In FY 2004, the focus shifted to configuration and implementation of the new suite of software products.

During FY 2004 and FY 2005 the complaints module (i.e. Code Enforcement Module) was successfully implemented at DPZ and the Health Department while the Contractor License module was implemented at DPWES and the Health Department.

In FY 2006, the FIDO permits module replaced ISIS at DPWES and in FY 2007 this module was also expanded at the Fire Department. FY 2007 activities also included the expansion of the Complaints Module at DPWES and FRD, respectively. In addition, the FIDO License Module was implemented at the Health Department to support the issuance of licenses to Fairfax County Beauty Salons, summer day camps, pools and child care facilities.

During FY 2008, additional building permit issuance capabilities were provided to Fire and Rescue Department, and well and septic permits (and Food establishment licenses) were added to FIDO modules at the Health Department, and the FIDO Code Enforcement (i.e. Complaints) Web page was expanded to include all (FRD, DPWES, Health Department) land use code enforcement violation types to facilitate detailed citizen reporting of alleged land use code violations.

In order to improve coordination and collaboration of County Code Enforcement activities and resolve code enforcement issues (e.g. homes with severe overcrowding in unsafe living conditions) a Strike Team was created to handle the most significant code enforcement violations with a cross-departmental team from Zoning, Public Works and Environmental Services, Fire and Rescue, Health, Housing, Police, and Sheriff.

Further enhancements to FIDO are required to sustain and expand the code enforcement efforts. Through the FIDO project the four critical departments assigned to the Strike Team — DPZ, DPWES, FRD, and Health — have many permits, inspections and complaints co-located in one central repository. However, Strike Team cases typically involve multiple violations that cross over multiple departments, codes, ordinances, and laws and therefore system enhancements are necessary to meet their specific business process and information reporting needs.

The FIDO solution is consistent with County standards and fits well with County's e-government strategy of using emerging technologies.

## 2.6 ENTERPRISE TELECOMMUNICATIONS

Superior voice communications is an organizational requirement in today's technological landscape. As government is asked to do more with less, stretching limited financial and human resources, it relies heavily on efficient voice communications to improve effectiveness in meeting the growing needs of constituents. Whether it is citizen access via e-government; efficient management of government information; the advancement of education; the safety of our children on school buses; or homeland security; voice communications plays an enormously critical role.

Integrating voice, video and data communications onto a common structure, which has been envisioned by the industry since the 1980's, is now becoming a reality. This convergence will bring tremendous benefits to enterprises such as Fairfax County that need enterprise-wide voice and data networks. New types of voice service platforms that support data application integration are commercially available and are seen as a cost effective means of improving County's service to citizens. Currently, that fully converged world is the provenance of "early adopters". After decades of high quality phone service provided through the traditional telephone networks, users expect new systems to have consistent voice quality, with never a doubt that they will hear dial tone when they lift the telephone receiver.

The long-term strategy for Fairfax County is to implement Voice over IP (VoIP) services and obtain the maximum utilization of its networking capabilities as well as garner the advantages in functionality and features that this leading-edge technology provides. DIT is implementing a strategy for voice services, utilizing convergent-IP ready technology, over the County's fiber I-Net. This strategy includes a solution architecture that is scalable to support the variety of county sites and agency business requirements distributed over 400 square miles. The strategy uses IP-based telephone service at the smaller sites, so that they can be brought into the common voice enterprise architecture, avoiding investment in larger more expensive equipment. Careful planning will significantly reduce the risks involved in converging IP data traffic with IP voice traffic onto one data network.

This strategy is both prudent and forward-looking. It will position the County to increase its use of advanced convergent technologies as these technologies mature. It allows the county to leverage its wide-area fiber network – I-Net for data, video and voice, and facilitates reductions in other voice service operational costs. The plan is in full alignment with the County's principle of implementing contemporary, but proven, technologies, optimizing IT investments and creating more operational cost efficiencies.

The following six strategic goals for Fairfax County voice services were developed and endorsed by County's Executive Management and serve as the building blocks for Fairfax County's Strategic Voice Technology Platform:

| Goal | Solution Element | Benefit to Fairfax County |
|---|---|---|
| 1 - Optimize the total life-cycle cost for voice services | Centralized Servers<br>Telephone sets can be moved by users w/o requiring system programming<br>Secure Centralized Management accessible from anywhere | Reduced cost to update/upgrade.<br>Moves Adds and Changes become less expensive.<br>No increase in personnel needed to manage the system |
| 2 - Provide common voice architecture, County-wide | Modular, scalable, "plug n' play" hardware and software components | Reduced cost to manage and maintain. Common look and feel of applications and telephones improves productivity of users<br>Users and applications are portable; ex. Call Center agents can be anywhere internally or externally and have the same capabilities. Users can move between sites and take their number with them, with or without moving their phone |
| 3 - Provide secure remote access for voice and data to expand Telework | IP Softphone/Agent with Advanced Encryption Standard (AES). Unique dual line Softphone, splits network signaling from voice<br>Citrix support for IP Agent | Conversations remain private and users can work from anywhere<br>Simplified operation for remote users that doesn't require QoS and allows use of any telephone<br>Contact Center agents can be remote and have secure access to applications. |
| 4 - Provide compatibility with "best-in-class" citizen access technologies | Contact Center, i.e. Skills Based Routing.<br>Mobility Solutions, i.e. Extension to Cellular. | Maximize # of productive information exchanges.<br>Citizens can reach County workers even when they are away from their office.<br>All employees/citizens have same opportunity to access information |
| 5 - Develop a survivable architecture that is scalable and flexible | 4 Layers of Redundancy, i.e. Mirrored Main Servers, Enterprise Survivable Servers (ESS), Local Survivable Processor, Redundant components<br>Moduler Components | Unparalleled reliability and resiliency of underlying architecture<br>Lower TCO as components can be combined and used in different ways like Lego building blocks |
| 6 - Prepare for the convergence of voice and data onto one logical network | Applications are media agnostic.<br>Universal licenses | Applications can be extended anywhere to any device, increasing productivity, and reducing cost.<br>Add IP Telephones when and where needed at reduced expense. Existing features work the same as users move from Digital Telephones to IP Telephones thereby easing transition and increasing productivity |

To achieve the goals for next generation voice switch architecture, as discussed above, there are a number of technical requirements that the target architecture should meet. The solution must support the County's integrated network philosophy with a single logical architecture. The solution must address the large number of County locations supporting a variety of business and operational needs. The solution must support a range of configurable telephone instruments and feature sets. Finally the solution must also address the following requirements:

- Constituent Relationship Management (CRM) Technology
- Automated Call Distribution/ Interactive Voice Response
- Computer Telephone Interfacing
- Remote Access and Telework
- Unified Messaging
- County-wide Voicemail
- Inbound Caller ID

The transformation of Fairfax County's voice platform is a significant endeavor that requires a great deal of planning and thoughtful implementation over many months, but it will have a revolutionary impact on the way that the County conducts business and provides services to its constituents. Voice over IP (VoIP) is clearly the strategic technology that the County embraces, using a phased approach to minimize risks at the two core locations. The new voice network infrastructure provides uniformity of telephone features at all County locations and will be the foundation upon which to integrate function specific call centers, creating a virtual Constituent Contact Center to streamline incoming call processing while reducing call center operating costs.

In FY 2006 the County selected a competitive solution and began implementation. This comprehensive project continues into and beyond FY 2009. The new functionality and integration of the voice and data platforms have already been implemented in a number of county facilities. The replacement of the current telephony infrastructure will serve approximately 15,000 Fairfax County employees. The migration will occur in phases which will allow multiple opportunities and avenues to prepare the FCG community for the transition, and thereby ensure a smooth change of voice platforms. Successful implementation requires accurate and consistent communications regarding project status, system features and functionality, dialing plan information, and changes that users (both employees and citizens) can expect.

## 2.7 LAND INFORMATION ACCESSIBILITY

In January 2006 the Board of Supervisors established the Fairfax County Land Use Information Accessibility Advisory Group ("Advisory Group"). The purpose was to review how land planning and development information is currently made available to the public, and to make recommendations for accessibility improvements. The target stakeholder audience includes County staff and management, novice citizens, active land use citizens, developers, property owners, and others with an interest in knowing more about proposed and ongoing land planning and development activities.

The final report was accepted by the Board of Supervisors in January 2007. The Advisory Group appreciated the responsiveness that County staff had already provided for this initiative. In addition, they recognized several significant improvements that staff had already implemented since the inception of this Board request, including:

- New web page design to reorganize and consolidate the land planning and development information (http://www.fairfaxcounty.gov/living/landuse/)
- New ability to search the Land Development System using a County address to see all nearby land planning and development cases (on a map or by listing, with drill down capability; http://www.fairfaxcounty.gov/ldsnet/ )
- New ability to search the Land Development System by Magisterial District to see area land planning and development cases (on a map with drill down capability; http://www.fairfaxcounty.gov/ldsnet/ ).

During FY 2008 and FY 2009 additional improvements are being implemented to improve public access to land development information based on funding availability, including:

- Adding Building Permit data to the LDSNET Search by Address\Search by Magisterial options,
- Providing web page accessible land planning and development case summaries in PDF downloadable formats,
- Enhancing the LDSNET and My Neighborhood web page integration to streamline end user navigation.


The Advisory Group recommended that the County embrace and build towards short-term, medium-term, and long-term improvements for land use information. Listed below are summaries of the 12 guiding principles, followed by 17 recommendations.

### Twelve Guiding Principles for Fairfax County Land Use Information

The following 12 guiding principles are designed to help maximize public involvement in the land use review and approvals processes, and encourage the continuing modernization of information technologies in Fairfax County's land use review and approval processes.

1. Make land use information publicly available and accessible at the earliest opportunity.
2. Use geocoding standards across all County databases, land planning systems, electronic development files, and documents.
3. Collect and manage information so that it can be accessed from multiple entry points such as geographic location or by steps in the land use approval process.
4. Make all public land use information easy to find, including information developed by others and submitted to the County, as well as County-generated information.
5. Ensure consistency and user friendliness across all web pages and across all ag0encies of the County.
6. Create standard report forms to allow searches across projects and aggregation of those data for use by County citizens.
7. Make sure that information systems and any changes made to them are open and scalable so future needs can be addressed.

8. Tailor land use pages to meet the needs of different user types, and provide information as early as possible about Comprehensive Plan land use proposals.
9. Require external land planners and developers to submit land use application information to the County via electronic files using geocoding standards; also request 3D modeling and other visualization technology for larger and more complex land developments.
10. Make land use information accessible to citizens with a range of access to tools and resources, including users with no or limited access to the Internet.
11. Establish procedures and provide resources to keep land use information as timely and accurate as possible.
12. Investigate ways to increase the dialog and information sharing among all land use stakeholders.

The following 17 recommendations and improvements are intended to be designed and implemented over a number of years:

- ***Expanded Application of Land Use Information Tools.*** The Advisory Group recommends development of a more integrated and intuitive "front end" web page or portal or repository that enables users to go to one location and search for land planning and development information relevant to their inquiry location; further integration of LDSNet, My Neighborhood, GIS, the Courts Automated Retrieval System (CARS), the Fairfax Inspection Database Online (FIDO) system that contains permits and inspections information, and the DTA IAS system which contains real estate parcel information, and other related systems; expansion of the My Neighborhood capabilities combined with a data warehouse; providing more land use data that can be imported into a constituent spreadsheet for further analysis.
- ***Further Integration of GIS into all County Land Use Information Systems.***
- ***Land Use Public Hearing Information***. For public hearings the County should make available electronically the information currently provided in the hard copy (staff report, proffers, development plans, and affidavits).
- ***Notification Process Above & Beyond State and Ordinance Requirements.*** Fairfax County should study how to provide a process to electronically notify interested citizens about pending land use actions within a user-specified distance of a County address and according to certain categories of proposed land use.
- ***Improve Access to Site-Specific Land Use History.***
- ***Electronic File Submission and Review.*** Fairfax County should update land use review processes to facilitate electronic file submission and review.
- ***Citizens and contractors requesting permits should be able to file electronically and utilize address or other information already on file with the County.***
- ***Land Use Orientation Page and Activity Calendar.***
- ***Verbatim Excerpts and/or Viewable Proceedings of Planning Commission Decision Discussions Should be Available Online.***
- ***Collection of Approved Plans and Visualization of Community-Wide Development.*** The County should collect an electronic version of approved development plans and build an easily searchable electronic library.
- ***Create New GIS Overlays.*** The Comprehensive Plan should evolve into a more digital model with GIS layers showing the approved plan with options and alternatives and a layer showing existing property development.
- ***Coordination within the County.*** The County should work to ensure more cross-departmental coordination and use of spatial data, including public access.
- ***Coordination with Other Jurisdictions.*** The Advisory Group recommends that County staff stay in close contact with other jurisdictions and other agencies (e.g. VDOT) in an effort to make land use information more accessible, to learn about new techniques and technologies, and to participate in collaborative initiatives.
- ***Outreach to County Stakeholders such as Citizens and Businesses.*** The County should use available land use information and

technologies to improve its conversation with and among citizens about land use.

- ***Outreach to Civic and Homeowner Associations.*** The County should encourage organizations like the Federation of Citizen Associations, District Councils, and larger citizen associations to work closely with Board member offices to collect information about which addresses and parcels are associated with each particular civic or homeowner association.
- ***Ongoing Focus Groups.*** Some type of periodic ongoing advisory group should meet to monitor progress and make further recommendations.
- ***Enhancements to the Board Auditorium.*** Enhance the capability for speakers and staff to use electronic media presentations and GIS displays in the Auditorium.

The Advisory Group encouraged the County to embrace the concept of continual innovative and incremental improvements as well as longer-term larger improvements as changes in business processes and technology permit. The Advisory Group also recommended that the Board provide consistent funding and sufficient resources to implement these recommendations as well as to sustain ongoing improvements.

To begin achieving the Advisory Group's vision, there will be a series of projects for new systems and enhancements made to existing systems. The final Advisory Group Recommendations are available at: http://www.fairfaxcounty.gov/landusecomm/

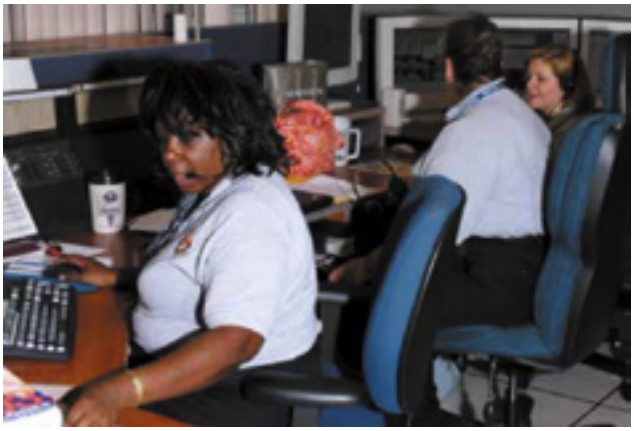
## 2.8 PUBLIC SAFETY INFRASTRUCTURE MODERNIZATION

The goal of the Public Safety Infrastructure Modernization Project is to procure an integrated suite of software to support Computer Aided Dispatch (CAD) and Records/Information Management Systems (RMS) for Fairfax County's Public Safety agencies. It includes the following major components:

- Replacement of the existing Northrop Grumman Computer Aided Dispatch system, Altaris
- Replacement of the existing Police Records Management system,
- Acquisition of EMS Incident Reporting solution for the Fire and Rescue Department, and
- Upgrading the current Fire Records Management system.

The CAD/RMS will serve as the core of this integrated, comprehensive public safety information management system. The County conducted a procurement process, starting with a Request for Qualifications (RFQ), followed by an RFP and a rigorous evaluation of the proposals in order to obtain a modern, integrated state-of-the-art solution with a proven track record.

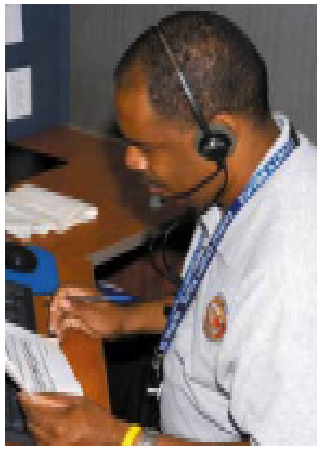
This project will provide the County's public safety first responders with ready access to the tools that will enable sharing of tactical information, often in real time and on-site, with a number of different entities such



as emergency management agencies; neighboring Public Safety Access Points (PSAP) and Police and Fire departments; as well as state and federal authorities including Department of Defense components. These requirements are particularly critical for the County and other jurisdictions in the National Capital Region and are consistent with NIMS guidelines.

There are numerous technical and functional improvements a new system will offer the County, and many are considered "baseline" products in current generation CAD and RMS applications. This new solution will include the following essential technical improvements:

- Integrated CAD/Records Management System for Police and Fire and Rescue - The current Police Records Management System is twenty years old, not integrated with CAD, and well past normal life cycle replacement. It does not support modern law enforcement and crime analysis activities.



- Automatic Vehicle Location (AVL) – The current CAD does not support GPS technology and applications to track the locations of public safety units. This is vital feature to insure personnel safety, as well as operational capabilities such as nearest unit response and appropriate resource utilization.
- Nearest Unit Response – Efficient routing based on quality mapping data, in combination with AVL will provide the fastest response to the scene and insure that the closest, most appropriate unit is provided with the optimal routing.
- Standards-Based GIS Capability that will integrate with and leverage existing County GIS data layer and mapping resources — Geographically represented data and information is essential to all public safety agencies, for both after action and statistical reporting, and for on-scene response and incident management. Integrated standards based GIS capabilities will enable the county to leverage technology resources and skill sets across the enterprise and increase efficiency.
  - Standards-based interoperability to support both internal County data and information sharing across public safety and related agencies, as well as critical external data and information sharing such as CAD to CAD, interoperability with Virginia Department of Transportation as well as Virginia State Police will provide collaborative incident response with neighboring jurisdictions supporting mutual response.
  - Up-to-date tools that improve system administration, enabling the County to better manage and own its application and increasing the ability for Public Safety to respond quickly and effectively to changing needs, and reducing reliance on third-party support and overall system maintenance costs.
- A non-proprietary, standards based system architecture built on a standard platform that reduces the frequency of costly and invasion forklift replacements based on hardware obsolesce. This improves the County's posture for planning refresh cycles into warranties and maintenance plans

## 2.9 LEGACY SYSTEM REPLACEMENT

The Fairfax County government and school system have embarked on a multi-year joint initiative that will modernize the portfolio of enterprise systems that support finance, human resources, budget, procurement and related administrative applications with a modern, integrated corporate solutions applications suite.

The project partners, County government and school system, are committed to fully participate and dedicate the necessary resources to successfully support the initiative. Additionally, as is the current methodology, the government and school system will operate on a unified financial, budget and purchasing system and will strongly consider future use of a joint human resources system.

The current 'stovepipe' legacy corporate systems are on various legacy technology platforms using a variety of hardware and software architectures integrated through a number of interfaces, integration and reporting tools. Previous assessments of these aging systems revealed that they are past their projected useful lifecycle, no longer meet today's technology standards, and do not meet the demands of resource and financial management and decision-making and improving internal processing efficiencies. Of these systems, the County government's Personnel Resource Information System Management (PRISM) is the most vulnerable to immediate obsolescence issues. It is over 20 years old and highly customized based on historical County operational practices to the extent that it cannot be further enhanced. Further, attrition of in-house technical staff as they approach retirement will jeopardize future support for maintaining this legacy application with the other systems approaching a similar expert support dilemma.

A governance body of senior officials of the County and school system stakeholder agencies has endeavored to identify the optimal strategy to pursue in its effort to procure an integrated financial/procurement/human resources/budget suite that will support agencies in the delivery of government and school services and activities, take advantage of best practices, provide the opportunity for multi-faceted data-driven decisions, significantly improve the efficiency and effectiveness of existing processes, enhance e-government initiatives and promote tele-work opportunities, and aid in the transformation and standardization of financial and human resource processes. This initiative will foster an environment of change and redesign to allow for more efficient and effective processes.

Previous funding was provided to begin an assessment of the legacy systems used to support core business functions; identify, review and streamline existing business processes currently supported by the legacy systems; perform and analyze a review of existing and future trends in the software and systems implementer marketplace; and identify and refine functional business requirements necessary in the future software. FY 2009 funding is provided to continue the investment in this initiative, positioning the project to award the software and systems implementer contracts.

The County and the Schools joint project team will ensure that the key owners and stakeholders within the enterprise will receive comprehensive opportunities in regards to the mapping of current processes, the initiation of system requirements and the selection of the appropriate software and implementation services. It is anticipated that an enterprise-wide, automated and fully function ERP will launch the County and the Schools into a new method and mode of doing business. The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution. With the migration to a more standard, supportable database and development environment that incorporates workflow and Web technology, both the County and FCPS anticipate a more customer friendly platform and architecture for some time to come.

# SECTION 3
## INFORMATION TECHNOLOGY PROGRAMS

# INFORMATION TECHNOLOGY PROGRAMS

## FEATURED IN THIS SECTION

# INFORMATION TECHNOLOGY PROGRAMS

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# SECTION 3
# INFORMATION TECHNOLOGY PROGRAMS

## 3.1 TECHNOLOGY OVERVIEW

### Purpose

Fund 104, Information Technology, was established in FY 1995 to strengthen centralized management of available resources by consolidating major Information Technology (IT) projects in one fund. Based on the 1994 Information Technology Advisory Group (ITAG) study, this fund was created to account for spending by project and is managed centrally by the Department of Information Technology. Historically, the E-911 Emergency Telephone Service Fee, a General Fund transfer, the State Technology Trust Fund, and interest earnings are sources for investment in Information Technology projects. However, in FY 2001, the E-911 Emergency Telephone Service Fee revenue and related project expenses were moved to Fund 120, E-911 to satisfy a State legislative requirement that E-911 revenues and expenditures be accounted for separately.

The County's technology strategy has several key elements; provide an adequate technology infrastructure for agencies in making quality operational improvements; redesign existing business processes with technology to achieve large-scale improvements in service quality and achieve administrative efficiencies; and promote the use of technology in enabling government services without "doors, walls or clocks". The County's long-term commitment to provide quality customer service through the effective use of technology is manifested in service enhancements; improved access to services electronically, expedited response to citizen inquiries, improved operational efficiencies, better information for management decisions, and increased performance capabilities.

### FY 2009 Initiatives

In FY 2009, funding of $19.1 million is provided for initiatives that meet one or multiple priorities established by the Senior Information Technology Steering Committee. These initiatives include a mix of projects that provide benefits for both citizens and employees and adequately balance continuing initiatives with the need to maintain and strengthen the County's technology infrastructure. Funded projects will support initiatives in the Human Services, Planning and Development, General County Services, and Public Safety program areas. In keeping with guidelines established for FY 2009, agencies were instructed that funding for new projects would be considered only if the submission met one or more of the following criteria:

- *Project met one of the five strategic priorities of the Fund*
- *Project considered low cost, short-term and small in scope*
- *Contractual obligations and/or to complete a phase of the existing project*
- *Project must be completed and maintained without additional staff*

A Project Review Team consisting of business and technical staff from the Department of Information Technology (DIT) and the Department of Management and Budget (DMB) reviewed all submissions. The project review included identification of projects that provide opportunities for improvement; those that help sustain the performance and reliability of the County technology infrastructure; and those poised to take advantage of technological advancements.

In addition, projects were reviewed from both a business and a technical perspective. On the business side, consideration included whether the implementation of the project would benefit citizens, the County or both. Benefits of the project were weighed against the cost of the project and several risk factors, including the risk of cost and scope escalation due to factors such as the type of technology chosen, organizational disruption, schedule viability and the impact of delaying the project.

On the technical side, factors examined included how closely the project matched, and its impact on, existing County IT infrastructure, and the technical uncertainty of the project as it pertained to the commercial availability of, and the organizational experience with, the proposed hardware, software and resource support. In addition, consideration was given

to the availability of human resources both in DIT and the sponsoring agency to staff the project.

### Funding Priorities

The Senior IT Steering Committee establishes the funding priorities for technology projects. Beginning in FY 2004, based on global changes in social and economic paradigm shifts, the new priorities shown below were adopted. The recommended IT investments meet the five key investment policy objectives shown below and are supported by the Senior IT Steering Committee and the ITPAC. A more detailed explanation of the projects within these requirements is provided within:

1. ***Mandated Requirements:*** (enacted by the Federal Government, Commonwealth of Virginia, Board of Supervisors, Court ordered or County regulation changes).
2. ***Completion of Prior Investments:*** (multi-year lease purchase, implements phase or completion of planned project).
3. ***Enhanced County Security:*** (homeland security, physical security, and information security and privacy).
4. ***Improved Service and Efficiency:*** (consolidate business practices; support more efficient government; optimize management and use of county assets and data; enhance systems to meet the expectations and needs of citizens; and promote service that can be provided through the Internet-'e-government').
5. ***Maintaining a Current and Supportable Technology Infrastructure:*** (consistent and reliable hardware, software and communications infrastructure; ensure that citizens, businesses and County employees have appropriate access to information and services).

The five investment policy objectives relate to the County's continuing focus on making access to government services more reliable, secure, and efficient. The projects on the following pages are supported and will receive additional funding in FY 2009. The established priorities for IT projects for FY 2009 are summarized as follows:

| Priority | FY 2009 Adopted Funding |
|---|---|
| Mandated Requirements | $0.3 million |
| Completion of Prior Investments | $1.7 million |
| Enhanced County Security | $5.7 million |
| Improved Service and Efficiency | $7.9 million |
| Maintaining a Current and Supportable Technology Infrastructure | $3.5 million |
| **TOTAL** | $19.1 million |

### Mandated Requirements — $0.3 million

The County is responsive to federal and state agencies' mandates, as well as to directives of the Board of Supervisors. Each year, agencies review mandates and directives to ensure compliance. In FY 2009 funding of $179,571 is included to upgrade and bring ParkNet, Fairfax County Park Authority's aging business application into compliance with the Payment Card Industry Standards (PCI) and replace aging hardware and operating system. The ParkNet system is critical to a range of agency core functions including recreation center and golf course point of sale activities, program and camp registration, and payments via the internet and IVR portal.

FY 2009 funding of $126,000 is provided to replace Department of Housing and Community Development's aging mainframe Loan Processing System which monitores loans made to resident homeowners under a number of County and Federal programs. Through the years both the functionality and technology associated with this system have become dated and the agency's needs for a more robust loan processing system have increased. Implementing a current loan servicing system that utilizes web technology to properly account, service and report on the excess of $46 million in loans in the HCD portfolio, many of which are not captured in LPS, will allow for enhanced revenue, and compliance with federally mandated HUD programs.

### Completion of Prior Investments — $1.7 million

The County's IT program focuses on using technology as an essential tool to enable cost-effective delivery of services, and continues to stress the need to build reliable, supportable projects for services in a timely manner. Many projects are funded annually that can be completed within that fiscal year. Others are multi-phase projects that require more than one year of funding for completion.

In FY 2009, funding of $188,218 is included to continue development of an Integrated Facilities and Grounds Management System used by the Facilities Management Department (FMD) and the Fairfax County Park Authority (FCPA). The system will increase the effectiveness and efficiency of staff and the utilization of capital resources required to maintain and manage County and Park facilities and properties. Funding in FY 2009 provides for integration services required for the completion of project milestones.

In FY 2009 funding of $988,960 (transfer from the State Technology Fund) will continue enhancement of Circuit Court's Court Modernization Project comprised of the Court Automated Records System (CARS) and the Court's Case Management System. The CARS project is designed to provide an integrated workflow process, using a single media and data storage system. The system provides the ability to scan, cashier, index, store and retrieve more than 100 different types of land record and other non-deed documents, including marriage licenses, financing statements, fictitious names, and charters. The Case Management Project focuses on implementation of an enhanced case management system that encompasses the civil, criminal and financial areas of the court, utilizes judicial resources more effectively, monitors case loads, increases accessibility and enhances efficiency by adding electronic filing, forms and document imaging and management

In FY 2009, funding of $500,000 will support continued technology rollout to courtrooms in the newly expanded Courthouse. The project provides the necessary consulting services and required hardware and software needed to outfit a modern day courtroom. These technologies include integrated and mobile evidence presentation, real-time court reporting, wireless access, electronic way-finding, video conferencing, video arraignment, and judges' control of the technologies from the bench. This project will improve citizen access, internally and externally, to the Courts; facilitate trials and hearings in the most effective and efficient means possible; allow for all three Courts (General District, Circuit Court and Records, and Juvenile and Domestic Relations District Court) to share common resources and provide for flexibility and adaptability to incorporate future changes in technology and court proceedings; and allow the Courts to keep up with the increasing demand and docket backlogs that currently exist.

## Enhanced County Security — $5.7 million

Ensuring the security of the County's IT investments and information assets is of primary importance to the Department of Information Technology. Through many projects and initiatives, efforts are focused on the security of various levels of County data, from email to homeland security measures. During FY 2009, the County will continue to implement a multi-faceted approach to securing County data and assets.

FY 2009 funding of $4,147,000 is included for the continuation of a multi-phase effort to implement a modern, comprehensive Law Enforcement Records Management System to replace the existing Police Department disparate information systems. The new system will improve the ability to prevent, respond to, manage, and analyze situations relating to the safety and property of County residents. Intelligence led policing, improved criminal justice, and overall strategic public safety resource deployment will be improved upon implementation. The system will expand the capacity of the Police Department, allowing it to better analyze -- statistically and through geographic-based means -- data on incidents and personnel. It will also aid in identifying trends, and assist in staffing decisions and monitoring departmental effectiveness. The system will integrate with the Computer Aided Dispatch (CAD) system in the Department of Public Safety Communications, ensuring a unified technology platform approach that facilitates the seamless sharing of processes and data across public safety functions and leverages available technologies.

Funding of $200,067 provides initial investment for the Fire Station Alerting Technology a component of the 911 system to meet the public safety goals of reduced response times, enhanced communnication, and immediate, relevant access to critical information. Availability of additional funds to meet the full first year requirements will be determined through ongoing budget optimization processes. The system will reduce reflex time for response by providing immediate unit based alert indication at time of dispatch and provide station alerting capabilities as required by NFPA 1221, and streamline maintenance and support for system components.

FY 2009 funding of $416,691 will support continued implemenation of the Emergency Medical Services Electronic Patient Care Reporting System (ePCRS) of the Fire and Rescue Department's Incident Reporting and Records Management Project. This system

enables the Fire and Rescue department to comply with the Commonwealth of Virginia's Office of Emergency Medical Services (OEMS) mandated emergency medical services (EMS) data reporting requirements. Funding will support integration of mobile computers in the field to ehnance patient care by improving documentation, electronically capturing immediate point of care data, tracking transport, paperless incident reporting, and billing. The FY 2009 funds will also support project management services and initial hardware for the Fire and Rescue Department's CAD/RMS infrastructure components. Funding for these components are critical to the overall Public Safety CAD/RMS project payment and milestones.

FY 2009 funding of $300,752 is provided for the Distribution Node Intrusion Protection System (IPS) project to provide the means to monitor and block data traffic as it traverses key intersections on the county's Wide Area Network (WAN), which provides connectivity for approximately 185 facilities through eight (8) aggregation points known as Distribution Nodes. Each Distribution Node serves as the access point for 12 to 30 remote county offices including Fire/Police Stations, Libraries, Park Authority sites, Senior Centers, etc. The implementation of the IPS at the Distribution Nodes will help mitigate the risk of malware propagation that could results in a potential shut down of County networks and disruption of essential services to citizens.

Funding of $663,223 is provided in FY 2009 for the fifth year of a seven year annual lease-purchase payment for the new Public Service Radio System network infrastructure. The project replaced a 20 year old Public Service Communications System, which provided two-way radio communications for all County non-public safety agencies, as well as the Fairfax County Public Schools Transportation Department (school buses), FASTRAN and Fairfax Water, with updated technology that meets the needs of user agencies. The system provides adequate call processing capacity and area coverage to more than 90 percent of the area within the jurisdictional boundaries of Fairfax County. The new network eliminates two zones within the county and provides seamless coverage on one system. Based on a portion of project costs, derived from the number of radios users operating on the system, $1,272,088 will be recovered from Non-General Fund Supported agencies, Fairfax County Public Schools and Fairfax Water in FY 2009.

### Improved Service and Efficiency — $7.9 million

Several projects funded in FY 2009 provide for additional improvement in service and efficiency. These improvements are aimed at both external County interactions, such as with residents and the business community, as well as internal County processes, that result in improved provision of direct services.

Fairfax County government and school system have embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support finance (FAMIS), human resources (government: PRISM/schools: LAWSON), budget (BPREP), procurement (CASPS) and related administrative applications with an integrated approach that has the flexibility to meet current and future requirements. The Legacy Systems Replacement project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. FY 2009 funding of $7,000,000 is provided to continue the investment in this initiative, positioning the project to award the software and systems implementer contracts. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution.

Funding of $158,840 in FY 2009 provides continued funding for the County's planned on-going maintenance of essential Geographic Information System (GIS) data. GIS provides County staff the means to electronically access, analyze and display land related data and is an integral part of public systems such as LDS Net and My Neighborhood as well as numerous internal county applications.

Funding of $208,190 is included in FY 2009 for continued integration of the County's e-government channels (Interactive Voice Response (IVR), Kiosk, Web, Infoweb, and Wireless) in order to enhance public access to electronic services and improve the County's public web site. Efforts will continue to ensure compliance with Section 508 standards requiring electronic and information technology accessibility to people with disabilities. Furthermore, the project will continue to improve the security of the County's E-Gov platforms, enhance E-Gov channels, and generate economies of scale by providing the needed infrastructure support for the ever-increasing demand for e-commerce/e-government services.

In FY 2009 funding of $300,000 continues Customer Relationship Management (CRM) efforts to establish a single access point with a common database for County government information and service requests for constituents by integrating and augmenting existing technologies. Funding will support integration and technical architecture requirements for deployment to agencies with current call center capabilities. The project will establish an enterprise solution for "citizen-in-take", enable employees to answer citizen questions, and log service requests through a standard interface and knowledge database, which eliminates the need for citizens to navigate through multiple County telephone numbers to find the right one, reduces the number of transfer calls from one agency to another, and minimizes the non-emergency help and assistance calls to 9-1-1.

Funding of $200,000 is provided in FY 2009 for continued implementation of the Court Scheduling and E-Summons Project, a multi-phase project focused on automating and streamlining traffic summons and related processes. The project is a partnership between Fairfax County General District Court and the Fairfax County Police Department. With completion of Court Scheduling (phase one), the current project is focused on implementation of an electronic summons solution for traffic tickets in Fairfax County. The goal is for officers to capture and transmit traffic summons information to the Court electronically via hand held or in-vehicle electronic devices. The project aims to eliminate manual data entry, ensure data integrity, provide accurate code section violations to officers in the field, facilitate faster and safer ticketing process for police department, and enhance public access to traffic ticket and case information.

### Maintain a Current and Supportable Technology Infrastructure — $3.5 million

In an evolving technical environment, maintaining a current and supportable technology environment is a challenge that must be addressed. The County's technological improvement strategy strives to balance the need to pursue existing initiatives with the desire to adopt new industry technology, and previous infrastructure investments with the need to take advantage of newer features and functionality. Various projects are funded in FY 2009 supporting the goal of providing consistent, reliable hardware and software, and ensuring that residents, the business community and County staff have appropriate access to information and services via technology.

FY 2009 funding of $1,892,458 will continue support for the Public Safety Architecture Modernization project which supports implementation of an integrated Computer Aided Dispatch (CAD) and Public Safety Records Management Systems (RMS), including public safety communications, as well as Police, Fire and Rescue, and Emergency Medical Services records management. This project provides the underlying architecture for the operational components of a CAD and RMS including network development; augmentation of the enterprise Geographic Information System (GIS) to meet public safety requirements; and provision of a commercial broadband wireless service. Executive project management is provided by the Department of Information Technology to ensure that implementation of RMS systems funded in existing projects (IT0048, IT0062 and PSTOC IT) share integrated and coordinated work plans and leverage resources across phases and functional areas.

FY 2009 funding of $1,534,750 is provided to continue implementation of the multi-year Telecommunication Modernization Project designed to provide proven, advanced technologies to streamline business processes, take advantage of economies of scale, enhance operational efficiency and reduce costs. An additional core benefit is the use of distributed telecommunications applications across an enterprise-wide network. The new voice communications platform provides secure communications to support telework, and integrates with e-mail and other messaging systems. This transformation ensures that the telecommunications infrastructure serves the needs of County agencies and advances service delivery to citizens, while maintaining flexibility to adopt future technologies with a minimal need for new spending.

Funding of $100,000 has been included in FY 2009 to provide for information technology training and certification in recognition of the challenges associated with maintaining skills at the pace of technological changes and to ensure that the rate of change in information technology does not out-pace the County's ability to maintain proficiency. As the County's workforce becomes increasingly dependent on information technology, training support has become more essential.

## 3.2 INFORMATION TECHNOLOGY PROJECTS

FY 2009 funding of $19.1 million is included for initiatives that meet the priorities established by the Senior Information Technology Steering Committee. The Senior IT Steering Committee and the Information Technology Policy Advisory Committee (ITPAC) endorses strategic concepts for improved efficiency, effectiveness, and service delivery countywide. DIT has informed both the Senior IT Steering Committee and the ITPAC that for the IT modernization program in FY 2009, 59 requests totaling over $46 million were submitted for Fund 104 consideration. Of this, 18 initiatives totaling $19.1 million are funded. Public Safety initiatives totaling $7,984,403 million are also recommended in Fund 120 (E-911).

The chart on the following pages provides a summary of the IT Project Fund 104 and Fund 120 modernization dollars since FY 2005. The County's IT program continues to address the need for building and maintaining a reliable, scalable technology foundation that can support IT projects to improve the effectiveness and efficiency of county services. Although investment dollars are currently constrained, it has been highly recommended that the County not fall substantially behind in its IT investment targets and goals that are focused on using technology as an essential tool to enable cost effective delivery of government services. To date the County's investments in technology have allowed Fairfax County to serve a growing population without significant growth in staff positions that would be otherwise necessary just to provide basic services.

A more detailed explanation of these projects is provided within. The five investment policy objectives relate to the County's continuing focus on making access to government services more reliable, secure, and efficient.

| Budget ID Number | Project Title | FY2005 ADOPTED | FY 2006 ADOPTED | FY 2007 ADOPTED | FY 2008 ADOPTED | FY2008 REVISED | FY 2009 ADOPTED |
|---|---|---|---|---|---|---|---|
| **FUND 120** | | | | | | | |
| IT0001 | Public Safety Communications Network | 6,698,934 | 8,497,796 | 5,908,579 | 7,233,079 | 11,337,369 | 7,984,403 |
| | **TOTAL FUND 120** | **6,698,934** | **$8,497,796** | **$5,908,579** | **$7,233,079** | **$11,337,369** | **7,984,403** |
| | | | | | | | |
| **FUND 104** | | | | | | | |
| IT0002 | Human Services Information Systems | 9,225 | 60,000 | 0 | 75,000 | 331,468 | 0 |
| IT0003 | Planning and Dv. Business Process Reds. | 402,674 | 0 | 0 | 0 | 0 | 0 |
| IT0004 | Geographic Information System (GIS) | 618,080 | 491,180 | 411,000 | 386,680 | 1,162,667 | 158,840 |
| IT0006 | Tax / Revenue Administration | 0 | 866,930 | 0 | 0 | 695,826 | 0 |
| IT0008 | Library Projects | 0 | 502,336 | 0 | 0 | 237,180 | 0 |
| IT0010 | Information Technology Training | 221,817 | 300,000 | 200,000 | 250,000 | 256,155 | 100,000 |
| IT0011 | Document Management and Imaging | 960,256 | 1,493,410 | 1,351,629 | 1,145,000 | 5,802,006 | 0 |
| IT0015 | Health Management Information System | 83,304 | 0 | 0 | 280,785 | 368,487 | 0 |
| IT0020 | Land Records Automated System (LRAS) | 0 | 225,000 | 0 | 0 | 65,232 | 0 |
| IT0022 | Tactical Initiatives | 540,600 | 850,000 | 276,539 | 96,648 | 1,643,834 | 0 |
| IT0024 | Public Access Technologies / E government | 500,000 | 500,000 | 475,000 | 275,000 | 1,185,192 | 208,190 |
| IT0025 | Adult Detention Center Information System | 812,465 | 697,160 | 0 | 0 | 360,815 | 0 |
| IT0031 | MS Office Suite Migration | 607,400 | 0 | 0 | 0 | 32,498 | 0 |
| IT0039 | Court Modernization Projects | 0 | 350,000 | 0 | 0 | 3,361,145 | 988,960 |
| IT0041 | Program Conversions and Replacements | 0 | | 0 | 0 | 43,436 | 0 |
| IT0043 | Human Resources Information System | | 0 | 0 | 0 | 427,956 | 0 |
| IT0048 | Incident Reporting and Training System | 0 | 0 | 0 | 0 | 3,727,277 | 416,691 |
| IT0050 | Public Service Communications Replacement | 449,930 | 491,864 | 588,517 | 632,166 | 2,583,259 | 663,223 |
| IT0054 | SYNAPS | 0 | 0 | 0 | 500,000 | 510,802 | 0 |
| IT0055 | Fairfax Inspections Database Online (ISIS) | 1,704,455 | 520,775 | 285,376 | 351,000 | 2,266,552 | 0 |
| IT0056 | Pilot Courtroom Technologies | 250,000 | 0 | 0 | 0 | 42,691 | 0 |
| IT0058 | Remote Access | 150,000 | 50,000 | 100,000 | 0 | 90,140 | 0 |
| IT0059 | Child Care Technology Systems | 0 | 0 | 0 | 194,165 | 337,079 | 0 |
| IT0060 | Telecommunications Modernization | 600,000 | 3,300,000 | 4,495,000 | 1,757,461 | 5,956,688 | 1,534,750 |
| IT0061 | Information Technology Security | 1,260,667 | 450,000 | 225,000 | 244,160 | 248,717 | 300,752 |
| IT0062 | Police Records Management | 70,000 | 300,000 | 500,000 | 2,200,000 | 2,815,130 | 4,147,000 |
| IT0063 | Facility Space Modernization | 100,000 | 99,208 | 0 | 0 | 33,802 | 0 |
| IT0064 | Proffer Database & Status System | 188,700 | 450,168 | 137,715 | 0 | 635,173 | 0 |
| IT0065 | Facility Maintenance Management System | 792,250 | 548,750 | 0 | 392,000 | 523,125 | 188,218 |
| IT0066 | Personal Property Tax System | | 0 | 0 | 0 | 153,106 | 0 |
| IT0067 | Stormwater Maintenance Management System | 0 | 335,993 | 0 | 0 | 307,586 | 0 |
| IT0068 | Home Occupation Permitting System | | | 46,375 | 0 | 117,425 | 0 |
| IT0069 | Integrated Housing Management System | 0 | 160,000 | 222,500 | 0 | 287,708 | 0 |
| IT0071 | Electronic Summons and Court Scheduling | 0 | 405,000 | 552,500 | 0 | 876,929 | 200,000 |
| IT0072 | Citizen Relationship Management | 0 | 0 | 500,000 | 250,000 | 365,432 | 300,000 |
| IT0073 | UDIS Replacement | 0 | 0 | 820,000 | 0 | 194,500 | 0 |
| IT0074 | Data Analysis Reporting Tool | 0 | 0 | 238,000 | 450,000 | 525,544 | 0 |
| IT0075 | Participant Registration System | 0 | 0 | 300,000 | 0 | 300,000 | 0 |
| IT0076 | Interactive Web Intake Program Enhancement | 0 | 0 | 130,000 | 0 | 130,000 | 0 |
| IT0077 | Land Development Industry Enhancements | 0 | 0 | 250,800 | 150,000 | 332,020 | 0 |
| IT0078 | Courthouse Expansion Technology | 0 | 0 | 1,730,000 | 0 | 1,718,435 | 500,000 |
| IT0079 | Legacy System Replacement | 0 | 0 | 0 | 800,000 | 800,000 | 7,000,000 |
| IT0080 | JUVARE Data Conversion & Expungement | 0 | 0 | 0 | 217,200 | 217,200 | 0 |
| IT0081 | Housing & Community Development Information | 0 | 0 | 0 | 125,000 | 125,000 | 0 |
| IT0082 | Land Use Information Accessibility Initiatives | 0 | 0 | | 300,000 | 400,000 | 0 |
| IT0083 | Public Safety Architecture Modernization | 0 | 0 | 0 | 2,687,750 | 2,687,750 | 1,892,458 |
| IT0085 | Loan Processing System Replacement | 0 | 0 | 0 | 0 | 0 | 126,000 |
| IT0086 | Fire Station Alerting | 0 | 0 | 0 | 0 | 0 | 200,067 |
| IT0087 | ParkNet Security Upgrade | 0 | 0 | 0 | 0 | 0 | 179,571 |
| | **TOTAL FUND 104** | | **$13,447,774** | **$13,835,951** | **13,760,015** | **45,282,967** | **19,104,720** |
| | | | | | | | |
| | **GRAND TOTAL: IT PROJECTS** | | **$21,945,570** | **$19,744,530** | **$20,993,094** | **56,620,336** | **26,337,799** |

## 3.3 PUBLIC SAFETY

### IT0001 PUBLIC SAFETY COMMUNICATIONS NETWORK/ SYSTEMS

#### Project Description

This project provides for continued support and maintenance of the Department of Public Safety Communications (DPSC) network and components. The network's component systems are vital for ensuring immediate and systematic response to emergencies, and replacement and enhancement is necessary to maintain performance, availability, reliability, and capacity for growth due to increases in County population and demand for public safety services. The Public Safety Communication Network (PSCN) supports emergency communications of the Police, Fire and Rescue, and Sheriff's departments. This includes public safety call taking (E-911, Cellular E-911, non-emergency), dispatching, and all affiliated communications support. Two of the major technologies utilized are a Computer Aided Dispatch (CAD) system with an integrated mobile data communications component and a wireless digital radio network for voice communications.

The mobile data communications capability facilitates the dispatch of resources with minimal voice communications, provides field units direct access to local, state, and national databases, and allows continuous contact with DPSC). As needed, this project provides funding for maintenance of the legacy systems and the mobile data communications component. Maintenance and support resources for legacy systems funded from 911 fees through Fund 120 are provided and ensure continued reliable operation of these critical systems. These legacy systems and components will be supported by this project while a parallel project, IT0083, Public Safety Architecture Modernization, supports development and implementation of a modern, standards-based integrated solution for County public safety agencies.

#### Project Goals

The goal of this project is to ensure immediate and systematic response to emergencies, and replacement and maintain performance, availability, reliability, and capacity for growth due to increases in County population and demand for public safety services.

#### Progress to Date

Fairfax County migrated to the new digital radio network in FY 2000 to accommodate growing public safety voice communications requirements and to remedy performance, coverage, fragmentation, and reliability problems associated with an aging, technologically obsolete system at the very end of its sustainable life cycle. Deficiencies in the old system severely impeded critical communications and safety in emergency situations. The new trunked wireless digital voice communications system consolidates all County public safety voice communication and is designed to address coverage, reliability, and operational limitations of the old system used by public safety agencies in the County.

#### Project Budget

FY 2009 funding is included for: completion of the phased replacement for the mobile and portable two-way radios currently in use by the Police Department, and the Office of the Sherriff ($945,000) and the second year of a five-year replacement cycle for Mobile Computer Terminals (MCTs) ($3,300,000). Both the two-way radios and the MCTs have a useful life of five years.

In FY 2009, the County will begin to update its Public Safety Radio System to a newer technology platform ($3,008,079). This measure was endorsed by the County Executive in October 2007. The FY 2009 projection represents project costs and Year One of a lease-purchase agreement for the new network infrastructure. The DPSC Vesta 911 and Backup Telephone Training Workstations project represents 10 telephone training workstations to be used by the DPSC for call taker training on the new telephone system ($731,324).

#### Return on Investment

The return on investment for this project is realized by the performance, productivity, and effectiveness of public safety services in Fairfax County. Replaced and upgraded technology for these systems is critical to the safety of the public and the public safety personnel they support.

## IT0011.5 JDRC ELECTRONIC RECORDS MANAGEMENT SYSTEM

### Project Description

Juvenile and Domestic Relations District Court is in the process of implementing a multi-phase work-flow and electronic records management system to allow the Court to replace traditional paper-based case files and manual court case processes with electronic court case records and automated workflows for case processing and management. The system will be designed to facilitate information management and the sharing of documents, objects, and unstructured data through the use of imaging, document management, records management, workflow, electronic forms, and enterprise application integration (EAI) tools. This project provides continued funding for the Juvenile and Domestic Relations District Court's planned multi-year implementation of an Electronic Records Document Management System. This document management system, which will be developed using the Documentum Enterprise Content Management system, will allow the court to maintain its case records in electronic rather than paper format. The increasing volume of case records and the complex retention, confidentiality, and destruction criteria as mandated by the Virginia Code have severely impacted the court's ability to manage the court documents. The Electronic Records Management System will convert new case records and retrieved existing case records to electronic format in order to substantially reduce the need to rely on paper documents to initiate services to the public.

### Project Goals

An electronic document management system will provide improved security and integrity of records, reduce the labor intensive and time consuming record retrieval and re-filing process, expedite workflow processes through an electronic workflow management system for court documents, provide simultaneous and instant access to court records, reduce costs associated with space and shelving for storage of paper documents, provide means of safeguarding documents with an electronic backup of court records.

### Progress to Date

The first set of processes for Informal Hearing/Monitored Diversion was implemented at the end of the third quarter of FY 2006. Functionality enabled in this first implementation included electronic document storage in case file format, workflow, form creation, scanning/scanned data routing, and enablement of electronic signatures. A large portion of the baseline infrastructure was also built. The infrastructure houses the various environments for testing, training, acceptance, development and production.

Due to the nature of the workflow, the project will develop in functional segments. The functionality must be built on the processes from intake or pre-court through the public counter, docketing, the courtroom, and post-court. Specific functionality includes case creation, document creation, user ability to view case records electronically, expungement, public viewing, redaction and workflow.

The user base will grow substantially; besides intake users presently utilizing the system, personnel will include the court clerk staff and public counter staff, judges, and the probation staff. The remainder of the user software licenses will be obtained, the remaining workstations will be updated and/or replaced, scanning in the courtrooms will be set-up and scanners will be added at additional locations around the county. An innovative training period to accommodate the large number of users and accommodate the diverse areas of duties will be planned.

### Milestones

- *Initial Servers, Scanners, ePads, SCSI cards, extender cables procured*
- *User access set up for Pilot, Production, Acceptance, Testing, Scanning, and Training*
- *Acceptance testing for Informal Hearing/ Monitored Diversion initial implementation completed successfully with incidents reported and fixes in place*
- *Successful completion of 5 scheduled 2 day training classes with a total of 40 users fully trained*
- *Successful implementation of processes for Informal Hearing and Monitored Diversion with use by intake officers, intake clerks and limited services staff*
- *Infrastructure to support application, docbases, scanning, etc. set-up (missing failover to another site in case of all server failure at the Government Center)*

- *Environments set-up for Acceptance, Test, Training, Production, and Scanning*
- *CYA software for data retrieval set-up, with 15 minutes scheduled back-ups taking place*
- *Successful deployment of hardware including desktops, monitors, scanners, and eSignature pads, for all presently activated users*
- *Successful deployment of software, including new County/JDRDC image, Adobe, and signature software loaded on users machines, and scanner software loaded on scanning workstations*
- *Creation of the ERMS lab (utilized for testing of the application and training sessions) which consists of 8 student workstations, one instructor workstation, a scanner and scanning workstation, and eSignature capabilities*
- *A Statement of Work has been issued to complete requirements and design phase for the legal process portion of the system.*

## Project Budget

The JDRDC ERMS project is anticipated to have sufficient funds to finish work through FY'09; therefore no further FY 2009 funding was requested.

## Return on Investment

Funding this project will reduce staff time spent locating missing files, and retrieving and re-filing records. It will reduce the physical storage space required for court records, avoiding the cost of leased space near the courthouse for overflow storage and in will reduce the amount of storage space required in the new courthouse. It will expedite the response time to internal and external customers at the Records and Fines and costs counters, and it will provide easier and more efficient public access to court records. Planned back-up systems will provide the necessary data security.

Fairfax County Courthouse
HDR Architecture, Inc.

## IT0025 ADULT DETENTION CENTER INFORMATION SYSTEM

### Project Description

The Sheriff's Information Management System (SIMS) provides improved functionality for booking, prisoner classification, medical, forensics, inmate programs, community corrections, court services, and administration information needs. In addition, the agency is better able to meet information exchange requirements mandated by the Virginia State Department of Corrections and State Compensation Board. SIMS provides new capabilities in multiple areas including visitor tracking, inmate restrictions and discipline, agency-wide event reporting, inmate referrals, community corrections and courts services. Data entry redundancies are eliminated, and the new system support s improved information sharing with other criminal justice agencies including the Police Department, Circuit Court, General District Court, Commonwealth's Attorney and other agencies.

### Project Goals

The goal of this project was an overall modernization of automated systems that support operations of the Sheriff's Office, including replacement of the 25 year-old Adult Detention Center Information System, modernization of the Sheriff Services System, and development of an inmate programs management information system. Although the project was originally conceived as a COTS acquisition, the RFP process did not result in an affordable solution that met the projects functionality requirements without significant customization.

### Progress to Date

This project was planned as a multi-year implementation. The requirement analysis was completed in November 2000 and release of the Request for Proposals occurred in January, 2001. The RFP process did not result in an affordable solution that met the projects functionality requirements without significant customization. Due to the extensive customization needs required and the proposals exceeding available funding for the project, it was decided to undertake the project as an in-house development effort. During 2002 and the beginning of 2003, additional requirements were defined and the Administrative Maintenance Tool for SIMS, was designed and programmed. In October 2003, the visiting module of SIMS was implemented and rolled into production. Detailed design and programming for the core application was completed in October of 2006. Some additional enhancements and streamlining of screens for faster data entry were requested and completed in December 2007. SIMS was implemented on February 27, 2008.

### Milestones

- *Complete Sheriff Inmate Program module, February 2002*
- *Complete Risk Analysis and Proof of Concept for architecture alternatives, April 2002*
- *Complete modernization of Sheriff Services System, June 2002*
- *Complete Requirements Documentation for Booking, Inmate Records, Classification and Confinement, March 2002*
- *Complete design and coding of SIMS Administrative Tool, May 2003*
- *Implement SIMS Administrative tables, October 2003*
- *Complete requirements documentation for Booking, Inmate Records, Classification and*
- *Confinement, July 2003*
- *Complete data Identification and conversion planning, August 2003 - February 2004*
- *Implement Visiting Module, June 2004*
- *Complete migration programming, February 2004 - December 2006*
- *Complete the design and coding of SIMS core modules, February 2004 – September 2006*
- *Perform analysis, design and code bar code and mug shot interfaces and enhancements to time credit, time calculation and weekender functionality, January 2007 – August 2007*
- *Complete Core SIMS modules September 2007*
- *Complete further enhancements to streamline inmate records module – December 2007*
- *Migrate processes to Core SIMS February 2008*
- *SIMS was implemented on February 27, 2008.*

### Project Budget

No new funding required in FY 2009.

### Return on Investment

The benefits of an integrated system include reduced operational costs, migration of aging legacy systems to a modern database, improved integration of criminal justice system and agency data, decreased reliance on preprinted forms and photocopies, and improved access to information for decision making. The benefits cannot be obtained with the current technologies and applications in place. Data will only be entered once at the point of contact. The streamlining of business processes and the elimination of standalone databases will be achieved by integrating the modules of the system. Other business process improvements will result from integration between the Adult Detention Center inmate data and the Pre-Release Center inmate data.

Cost savings will be achieved from eliminating data entry redundancies existing between numerous small Access and Excel databases, and other organizational units within the jail and other agencies in the criminal justice system. Also, savings will be achieved by providing public access to data in appropriate cases such as on-line inmate inquiry, thereby eliminating significant call-taking responsibility by booking deputies and providing customers direct access to data. The non-quantifiable benefits will enable all divisions within the Office of the Sheriff to leverage data entered by other divisions for their unique business needs, reducing redundancy in data entry and eliminating paper processing steps in present operations.

## IT0039 CIRCUIT COURT TECHNOLOGY

The Fairfax Circuit Court is nationally recognized for its delivery of outstanding public service and continues to actively pursue state of the art technological solutions to improve customer support and operational efficiencies. This project covers multiple facets of Circuit Court operations and receives funding through the Commonwealth of Virginia's Technology Trust fund.

### Project Description

Court Automated Recording System (CARS) - The Clerk's Office of the Fairfax Circuit Court is responsible for providing Fairfax citizens with reliable, timely, and accessible public records. As custodian of historical land records, the Land Records, Public Services and Probate sections of the Circuit Court recognized a critical need to preserve deteriorating paper documents, to ensure their availability for future generations. This project was initiated in an effort to preserve these documents and streamline the methods used to record, maintain, store, and view them. To date, more than 35 million Land Record, Public Service and Probate images, dating from 1742 to the present have been digitized, indexed and loaded into the Court Public Access Network (CPAN). CPAN is a web-based, online retrieval system that is available 24 hours a day, 7 days a week, with more than 2,000 subscribers located in twenty-six states and the District of Columbia. Subscribers include citizens, title examiners, law offices, mortgage companies, banks, the Commissioner of Accounts, and county agencies.

Case Management System (CMS) - Circuit Court is pursuing the replacement of the existing 10 year old case management system with a state of the art system integrating civil, criminal and financial processes with imaging and electronic filing capabilities. The system will optimize judicial resources, monitor case loads, increase accessibility to court operations.

Document management interfaces will be established with the Sheriff's Office, Department of Motor Vehicles, Virginia Department of Tax Administration, Supreme Court of Virginia and CPAN to information sharing and referential integrity.

### Project Goals

Circuit Court modernization initiatives in the Clerk of Court's technology program include:

- *Expanded electronic filing of more than 100 land record document types*
- *Replacement of the 10 year old case management system with a fully integrated system providing civil and criminal processing, imaging and electronic filing capabilities*
- *Redesign of the CPAN web capabilities*
- *Implementation of the Commonwealth's redaction legislation for land records*
- *Development of an alternate site for CPAN access to provide additional security and continuity of operations*

- *Increase the number of courtrooms which use new technologies to facilitate remote testimonies, audio and visual displays of evidence, integrated assisted listening and interpretation capabilities*

### Progress to Date

Past accomplishments include development and deployment of the Court's Land Records Recording System, including document imaging; implementation of the Court Public Access Network (CPAN) retrieval system, use of an automated jury management system to administer 45,000 potential jurors annually; deployment of a case management system to control the administration of the Court's judicial caseload; development and implementation of paperless probate processing; development and implementation of a streamlined marriage license process which utilizes scanners to import data from customers' operator licenses; implementation of electronic docketing display directing public to the assigned courtroom.

### Milestones — CARS

- *Digitized back-file images with associated indices and implemented web-based CPAN, completed 1999*
- *Scanned, indexed, and stored all land record documents for electronic processing, completed 2000*
- *Added non-deed document processes for indexing and storage (judgment abstracts and notices, marriage licenses, financing statements), completed 2000*
- *Redesigned processes to include automated cashiering and scanning capabilities to update the public record in a more efficient manner, completed 2001*
- *Expanded images and associated indices available on CPAN to 1742, completed 2001*
- *Electronic filing prototype for mortgage releases using the ACH transfer of funds, completed 2002*
- *Implemented Public Services cashiering system, completed 2005*
- *Automated the administration of estates system, completed 2006*
- *Incorporated the use of commercial credit cards for payment of fees and taxes, completed 2007*
- *Creation and implementation of electronic filing system, estimated completion 2009.*

### Milestones — CMS

- *Provided web-based availability of court information on CPAN, completed 2005*
- *Implemented electronic docketing display directing public to the assigned courtroom, completed 2006*
- *Conducted demonstrations of case management systems recommended by the National Center of State Courts in preparation for the RFP, completed 2006*
- *Anticipated award of contract for enhanced Case Management System.*

### Budget

FY 2008 Technology Trust Funds of $1,299,648 will be used to support the above CARS, CMS initiatives. It is anticipated that in FY 2009 the State Technology Trust fund will provide $988,960 in support of Circuit Court technology projects.

### Return on Investment

CARS provides immediate electronic access to CPAN for over 2,000 commercial customers. The system provides added functionality to search for and correct errors that occurred in documents recorded in the previous land records system. Additional benefits include enhanced retrieval and administration of Circuit Court records and an expedited transfer of information to the Department of Tax Administration, Geographic Information Systems and the Department of Public Works and Environmental Services.

For CMS, anticipated imaging and electronic filing enhancements will provide increased efficiencies in the processing of more than 22,000 civil and criminal case filings annually. Multiple parties will be able to access electronic case files simultaneously and file documents from their office or home, reducing the need to travel to the courthouse and provide 24/7 accessibility. Potential interfaces with other jurisdictions will allow the exchange of electronic documents and/or data and eliminate existing manual processes between jurisdictions.

## IT0048 FIRE AND RESCUE INCIDENT REPORTING AND RECORDS MANAGEMENT

### Project Description

The Fire and Rescue Department's Incident Reporting and Records Management Project is a multi-phased implementation of a highly integrated Fire Records Management System. In FY2007 work began on the third major system development initiative, the Emergency Medical Services Electronic Patient Care Reporting System (ePCRS). In, FY 2006 the ePCRS project was combined with the County's Public Safety Computer Aided Dispatch and Records Management System (CAD/RMS) and Project IT00048 has been tightly integrated into the project and budget plan for the multi-year Public Safety CAD/RMS initiatives. Phase IV is scheduled for FY 2010 and will include the final phase of the Public Safety CAD/RMS project with the full implementation of a Fire Records Management System that is integrated with the existing CAD, Incident Reporting, and ePCRS applications.

### Project Goals

System procurement is part of a multi-system replacement project called Public Safety Architecture Modernization, which will result in the replacement of the current Computer Aided Dispatch System, Altaris, as well as the legacy Police and Fire Records Management Systems and the implementation of a field-based electronic Patient Care Reporting System (ePCRS), a Tactical Incident Management system, and upgrade of the existing Fire Records Management System.

The ePCRS constitutes the deployment of tablet computers to all Fire and Rescue units. Patient treatment information is collected directly on the tablet PC while the crew members treat the injury/medical problem. The patient information is linked via secure wireless service to the electronic Patient Care Servers for direct storage. The process is fully HIPPA compliant and is more secure than the current method of producing hard-copy reports.

The one-time entry of patient and incident information reduces the overall time required to complete the required reporting process through the elimination of duplicate processes and provides more accurate information for better recordkeeping. This system will enable the Fire and Rescue department to comply with the Commonwealth of Virginia's Office of Emergency Medical Services (OEMS) mandated emergency medical services (EMS) data reporting requirements.

### Progress to Date

In FY 2006 $3,162,881 was transferred from the agency operating budget to the Technology Fund for the purchase of an Electronic Patient Care Reporting System. Additionally, $350,000 was transferred to the project to cover consulting services. Simultaneously, work began on the development of the Public Safety CAD/RMS solicitation and the two projects were functionally combined. By combining the overall project management and aligning the implementation of the two projects, the County is able to leverage the various infrastructure investments for all Public Safety agencies. A contract was awarded in the late fall of 2007 and initial system configuration began in January 2008. Sixty-day training and a transitional go-live process began in late March 2008.

### Milestones

- *Electronic Patient Care Reporting System (ePCRS) Contract Negotiation, July –September 2007*
- *Implementation OF ELECTRONIC Patient Care Reporting System April 2008*
- *Functional Acceptance Test and start of rolling go-live, April 2008*
- *Completion of ePCRS Server/Infrastructure build-out within the Public Safety and Transportation Operations Center, September 2008*

### Project Budget

Project staff consists of Fire and Rescue, Department Information Technology, and Communications Sections personnel supported by program management consultant services. Department of Information Technology staff provide technical support as well as Executive Management of the project under the auspices of the Public Safety Modernization project.

FY 2008 Project Funding was used for consulting services, programming, training, software licenses, and hardware for the ePCRS program. The FY 2009 funding of $416,691 is provided for the next phase of CAD and FRMS project implementation. Funding for these components is critical to the overall Public Safety CAD/RMS project payment and milestones.

### Return on Investment

The Electronic Patient Care Reporting System will provide more timely and accurate tracking of patient transport information. This will be accomplished by creating more detailed and legible patient treatment documents electronically with a tablet device directly interfaced with the current Computer Aided Dispatch system. With this system, billing information can be readily and securely extracted and electronically transmitted to the billing vendor. This will greatly improve the efficiency of billing and revenue collection.

The system is designed for on-scene reporting of information while treatment is being delivered. Patient care is enhanced through accurate documentation and information dissemination to the medical facility when the patient is transported. A reduction in the staff time required to complete patient care and incident reports should provide units with a quicker "return to service" time. The overall Fire and Rescue Incident Reporting and Records Management project allows the Fire and Rescue Department to comply with National Fire Protection Agency coding requirements and the Virginia EMS mandated reporting requirements. The project will improve the quality of data, the management of data and statistical analysis. This project will also improve decision making capabilities such as placement of new fire stations, resource/apparatus standards and improved preplans and tactical information for operations.

## IT0062 POLICE RECORDS MANAGEMENT SYSTEM

### Project Description

In FY 2006, this project began the first phase of a multiphase effort to replace existing Police Department disparate information systems with an integrated law enforcement records management system. This project, as well as related Fire and Rescue Department (FRD) service projects, is reliant on IT0083, Public Safety Architecture Modernization Project, which provides essential infrastructure components for these related initiatives. Executive project management is provided by Department of Information Technology staff to insure that implementation of the records management systems funded in existing projects (IT0048 and IT0062) share integrated and coordinated work plans and leverage resources across phases and functional areas.

### Project Goals

The new law enforcement records management application will integrate with the Computer Aided Dispatch (CAD) system in the Department of Public Safety Communications, ensuring a unified technology platform approach that seamlessly shares processes and data across public safety functions and leverages available technologies. The new system will improve the ability to prevent, respond to, manage, and analyze situations relating to the safety and property of County residents.

### Progress to Date

An RFP for an integrated CAD and law enforcement records management solution was completed during FY 2007 and a contract was signed in September 2007. The first project deliverable was the completion of a gap analysis for all functionality and applications covered by the procurement. The integrated application was evaluated to determine the extent to which the COTS solution will meet Police Department needs for law enforcement records management. During the gap analysis process the solution was also evaluated for functionality used by the Sheriff's Office Civil Enforcement Section and by the Fire Marshal's Office. In addition to completion of the gap analysis, the COTS software product was installed and configuration workshops were provided by the vendor, Intergraph Corporation's Public Safety Services Division. This product has been designated as the Integrated/Law Enforcement, AFR, Dispatch and RMS System (I/LEADR) within the Police Department. The Police Department has had an active Project Team since the inception of the project; however, with the arrival of vendor personnel on site, a larger cadre of police personnel is being mobilized to support this initiative. This COTS implementation will be among the largest technology initiatives, and certainly the most extensive records management upgrade for the Police Department in the past two decades.

### Milestones

Records Management System Replacement

- *Records Management System solicitation, April 2006*
- *Records Management System Vendor Selection, May 2007*
- *Records Management System Contract Negotiation, September 2007*

- *Implementation of new Records Management System (LERMS), May 2009*

### Project Budget

FY 2009 funding continues the investment into the new I/LEADR System. FY 2009 funding of $4,147,000 is provided to complete the configuration, testing and implementation of the new system.

### Return on Investment

A unified public safety architecture consisting of a modern records management system, integrated with CAD and other public safety agencies management systems, will result in more cost effective public safety operations. This project will ultimately impact nearly all aspects of police work and police information collection, and link them through an integrated system with CAD. A modern system that assures accurate, timely, reliable and accessible information on events, County geography and Police information will permit the Police Department to efficiently act upon events, from initial response through tracking, investigation and reporting. Additionally, capture and storage of reliable and accessible data from the system will result in the ability to effectively address staffing, crime analysis, resource allocation, tactical planning and strategic planning. The new system will provide opportunities to increase effectiveness by eliminating redundant work and open up opportunities for information sharing and interoperability between law enforcement agencies. This is a significant tool in developing investigative leads, linking crimes across jurisdictional boundaries, and conducting crime analysis.

## IT0071 ELECTRONIC SUMMONS AND COURT SCHEDULING

### Project Description

This project is designed as a joint effort between the Fairfax County General District Court (GDC) and the Fairfax County Police Department (FCPD) to develop automated solutions that will streamline the traffic summons and court scheduling processes by managing court dockets in a manner that will minimize high and low periods of activity, provide judges and court personnel with a more predictable and manageable workload, and implement of an Electronic Summons application to automate the transfer of summons information from the scene to Police Department's Records Management and the District Court's case management systems.

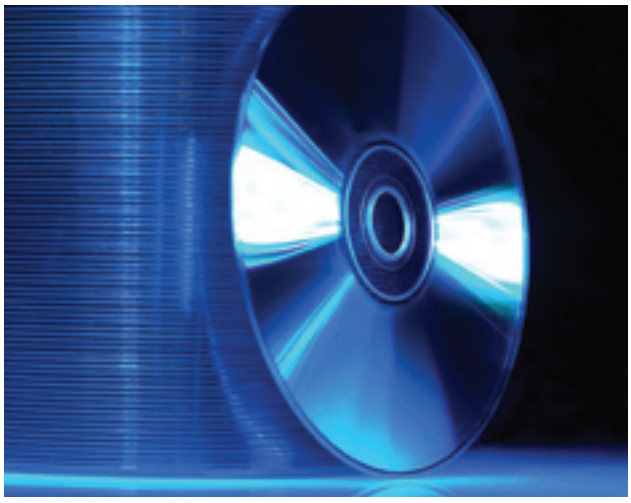
### Progress to Date

Phase I: the Court Scheduling System (CSS) an application constructed by DIT using ASP.NET 2.0 resides on the Fairfax County Infoweb farm. CSS allows court administrators to enter valid court dates into the application and set minimum and maximum caseloads per courtroom based on statistical information from the Court's case management system (CMS). Fairfax County Police Department staff enters squad requests for traffic court dates into the system. CSS processes the schedule using the agreed upon business rules to distribute officers across court dates. The system will indicate where courtrooms are over or under capacity and attempt to level out and evenly distribute court cases. CSS produces reports to help manage and resolve scheduling issues between GDC and the Police Department.

In the first part of Phase I (Part A) additional functionality was added to streamline assigning officer court dates. Part B of Phase I will enhance the application to include modules that allow the Police Department to enter criminal and juvenile cases court dates. Currently, CSS is designed only for County Police adult traffic summons scheduled in General District Court. Part B will also accommodate the State Police and other jurisdictions allowing each group to maintain their own user populations and shifts.

Phase II and Phase III

Phase II is the procurement of an electronic summons solution for traffic summons. Review and analysis of an E-summons module as part of the current integrated



CAD/RMS project is under way. As part of Phase III, the Court Scheduling system will be revised to accept data directly from the State Court Management System in order to more accurately predict court workload by using both historical and real time data. Real time ticket data will be exported to the State and disposition data will be imported from CMS.

### Project Goals

Goals are to provide the public efficient and timely electronic access to cases to enhance the public's ability to utilize automated options for review of case information and payment of fines; and improve access to statistical information about the monthly summons issuance patterns to identify officers with heavy caseloads to manage court dockets more effectively therefore improving service to court users and the public.

### Milestones

- *Organization of GDC/FCPD project team, April 2006*
- *Development of business and requirements analysis, December, 2006*
- *Implementation of Phase I, Part 'A' CSS Version 1.0 December 2006*
- *2007 July – December traffic court calendar processing completed in May, 2007*
- *2008 traffic court calendar processing completed in October, 2007*
- *Implementation of Phase I, Part 'A' CSS Version 2.1 and 2.2 with enhancements, October, 2007*
- *Implementation of an Electronic Summons Solution*

### Project Budget

Additional FY 2009 funding of $200,000 continues the multi-phase project to develop technology solutions including creating a Court Schedule Forecasting application that will use cyclical information about the volume of summons to pre-allocate available court dates to ticket writers in order to avoid unmanageable dockets and officer overtime; and the implementation of an Electronic Summons application to automate the transfer of summons information from the scene to Central Records and GDC.

### Return on Investment

Automated solutions will allow for the reallocation of existing staff to positions that provide direct assistance to the public, ensure greater accuracy in capturing defendant information, eliminate data entry errors with potentially serious repercussions for defendants, allow faster ticketing processes that get officers back on the road more quickly, reduce overtime for officers waiting in court, reduce the frustration and time citizens have to wait in court for a hearing, provide more efficient use of Commonwealth's Attorneys and Deputy Sheriffs, as well as provide the public near real time electronic access to case Information.

## IT0078 COURTHOUSE EXPANSION TECHNOLOGY

### Project Description

This project will assist with the planning, design and implementation of modern courtroom technologies for fourteen new courtrooms constructed as part of the on-going Courthouse expansion efforts. These technologies include integrated and electronic evidence presentation, video conferencing capabilities to allow remote witness, remote judge, video arraignment and secluded witness, automated court reporting, assistive listening, electronic wayfinding and docket display, and judges' control of the technologies from the bench. The courtroom technologies proposed advance the recommendations provided from the working prototype project developed from the original Courthouse design master plan and supported by the Counties affiliation with the Courtroom 21 Project associated with the College of William and Mary School of Law.

### Project Goals

This project will implement modern courtroom technologies as part of the overall courthouse expansion efforts. The main objectives seek to improve citizens access, internally and externally, to the Courts, facilitate trials and hearings in the most effective and efficient means possible, allow for all three Courts to share common resources and provide for flexibility and adaptability to incorporate future changes in technology and court proceedings. Consistency and standardization between the three Courts is necessary to maintain efficient courtroom operations and optimize available resources.

### Progress to Date

The Courtroom 5E Prototype was completed in March 2006. This project succeeds the completed prototype

project and implements modern courtroom technologies into 14 new courtrooms recently constructed as part of on-going courthouse expansion efforts. Phase I of the construction process was completed February 2008. The installation and integration of the master courtroom technology plan is in-progress with the completion of the initial five new courtrooms for Circuit Court and General District Court planned for completion by June 2008. Phase II will include the completion of nine new courtrooms for the Juvenile and Domestic Relations District Court.

### Milestones

- *Completion of courtroom prototype project, March 2006*
- *Testing/ evaluation in "live" trial environments, April 2006 – December 2006*
- *Completion master courtroom technology plan/design for new/renovated courtrooms, January 2008*
- *Completion of first phase construction, February 2008*
- *Phase I Courtroom Technology Implementation and upgrades, 5 new courtrooms; March 2008 – June 2008*
- *Phase II Courtroom Technology implementation and upgrades, 9 new courtrooms; July – December 2008*

### Project Budget

FY 2007 funding of $1,730,000 will complete the first phase of the recommended technologies in the new wing courthouse for five Circuit Court and General District Court courtrooms. FY 2009 funding of $500,000 will partially support the second phase necessary for the remaining nine Juvenile and Domestic Relations District Court courtrooms. Funding includes consulting services and the procurement of the necessary hardware and software needed to outfit a modern day courtroom. All three courts are working off of a single, integrated technology master plan for both new and existing courtrooms.

### Return on Investment

The primary benefit will be improved efficiencies and the facilitation of court processes and services that will provide a direct impact to citizens, businesses, and employees. The main objectives are to improve citizens access, internally and externally, to the Courts; facilitate trials and hearings in the most effective and efficient means possible; allow for all three Courts to share common resources and provide for flexibility and adaptability to incorporate future changes in technology and court proceedings; and allow the Courts to keep up with the increasing demand and docket backlogs that currently exist.

## IT0080 JDRC RESIDENTIAL SERVICES INTAKE SYSTEM (RSIS)

### Project Description

This project's original goal was to convert archival mainframe data to a modern platform in order to improve Court staff's ability to access and manipulate the data. However developing expungement rules that met Commonwealth and Code of Virginia standards proved impractical and it was determined that the entire application and dataset could be eliminated if other systems were fully developed to provide similar functionality for record management and ensure compliance with state requirements. A scope change was approved to develop a more robust version of Juvenile and Domestic Relations Court's Residential Services Information System (RSIS), which is the official database for residential placement information previously hosted by JUVARE. RSIS will be enhanced, converted to a newer platform and re-deployed in order to provide Court staff easy access to data required for court operations.

### Project Goals

Project goals are to re-write existing Residential Services Information System (RSIS) using current county application development standards and implement new RSIS to provide agency staff access to residential placement data on Court-involved youth once contained in JDRC's legacy JUVARE application.

### Project Goals

New Scope approved in FY 2008.

### Project Budget

FY 2008 funding of $217,200 will enable the development and deployment of a new RSIS application using .NET and SQL technologies that meet current county standards. No funds required for FY 2009.

### Return on Investment

Since the RSIS application is extensively used by agency staff to track residential placements and their associated data, the new system will reduce the time and cost for implementing enhancements that naturally occur due to changes in the residential programs and JDRC's business processes. The wider use of the application within the agency will reduce the time required to provide information to other agencies, court-involved public and internal staff. The new environment also allows for easier integration of this application with other core agency systems which can further streamline operations to better serve the public.

## IT0083 PUBLIC SAFETY ARCHITECTURE MODERNIZATION

### Project Description

The Public Safety Architecture Modernization project supports implementation of an integrated Computer Aided Dispatch (CAD) and Public Safety Records Management Systems (RMS), including public safety communications, as well as Police, Fire and Rescue, and Emergency Medical Services records management. This project provides the underlying architecture for the operational components of a CAD and RMS including network development; augmentation of the enterprise Geographic Information System (GIS) to meet public safety requirements; and provision of a commercial broadband wireless service. Executive project management is provided by the Fairfax County Public Safety IT Governance Board. The Public Safety Architect works with agency project managers and DIT to ensure that implementation systems funded in existing projects (IT0048, IT0062, IT0083, and PSTOC IT) share integrated and coordinated work plans and leverage resources across phases and functional areas.

### Project Goals

The project will implement an integrated public safety information architecture enabling data sharing across functional areas of the CAD and RMS in order to support key public safety lines of businesses and provide flexibility to respond to both internal and external data sharing requirements. In this multi-track and multi-phase project, the legacy CAD and Mobile, Police RMS and Fire and Rescue RMS Systems will be replaced. In May 2008 a new Emergency Patient Care Reporting system (EPCR) was the first application to be implemented as part of this project. Options for integrating with the existing Sheriff's Office information system will be evaluated as well.

### Progress to Date

The Project Plan called for completion of a gap analysis for each of the applications planned under this project. The County and Intergraph, the selected CAD/RMS vendor, jointly reviewed and validated all of the County's functional requirements as part of this effort. This was completed and the first planned implementation, the EPCR, was placed into production. Completion of these two high level goals included completion of several tasks that are key to next phases of the project, including network and infrastructure design improvements and upgrades, confirmation of the requirements, and assessment of strengths and weaknesses of the existing commercial wireless vendors to support the project's functional requirements. All Fire Department work sites have been upgraded with wireless hotspots. They now support the EPCR application, but will ultimately support CAD Mobile, Police Records Management and other Fire applications. Police and other County buildings have not yet been upgraded. The public safety wireless hotspots will provide data communications to the field units, enable updates to the systems to be pushed out over an internal network instead of having to manually touch every one of the mobile units in the County fleet.

### Project Budget

FY 2009 funding of $1,892,458 is provided to complete implementing the defined network enhancements to support the systems, GIS data development to support geospatial needs of the applications and provide

continuing payments on wireless service contracts to support CAD Mobile functionality and Police Records Management functionality as these systems go live.

### Return on Investment

The Public Safety Architecture Modernization project represents the first joint initiative undertaken by the public safety agencies in Fairfax County (Department of Public Safety Communications, Police Department, Fire and Rescue Department, Sheriff's Office and Office of Emergency Management) and provides an integrated public safety suite for CAD and RMS, with supporting network infrastructure to support robust GIS including automatic vehicle location (AVL), automatic vehicle routing recommendations (AVRR), broadband wireless data services and automated field reporting.

## IT00086 FIRE STATION ALERTING TECHNOLOGY REPLACEMENT

### Project Description

The purpose of this project is to provide a turn-key system replacement of fire station alerting components. This alerting system is a critical part of the 911 system and public safety response, and is a requirement specified in the National Fire Protection Association (NFPA) 1221 Standard. Existing station alerting equipment at the County's fourty fire and rescue stations is nearing end-of-life and the primary components are not compatible with an Internet Protocal (IP) network infrastructure. This is a technology lifecycle replacement that is required in order to bring the Fire and Rescue Department's station alerting system to a technical level that will permit integration to the selected Public Safety Computer Aided Dispatch and Records Management Systems (CAD/RMS).

### Project Goals

The business and operational objective is to purchase and implement a proven fire station alerting system that enables Fairfax County to meet the public safety goals of reduced response times, enhanced communication, and providing immediate, relevant access to critical information. The goal is to integrate the Fire and Rescue Department's station alerting system with in the Public Safely Communication Center systems. The system will reduce reflex time for response by providing immediate unit based visual and verbal alert indication at time of dispatch and prior to radio voice dispatch, provide safe lighting and alert process throughout station for personnel response to vehicles, provide personnel with immediate relevant information regarding the event by text display and verbal recorded announcement, provide station alerting capabilities as required by NFPA 1221, and streamline maintenance and support for system components.

### Project Budget

Fy 2009 funding of $200,067 provides initial investment for the Fire Station Alerting Technology. Availability of additional funds to meet the full first year requirements will be determined through on-going budget optimization processes.

### Return on Investment

The Fire and Rescue Department expects to reduce overall response time to emergency incidents through immediate alerting of personnel. The system leverages the Computer Aided Dispatch system and provides immediate unit based alert indications at time of dispatch and prior to radio voice dispatch. The process reduces what the industry calls the "reflex time", or the amount of time between when the call is dispatched and when the response units are boarded by personnel and ready to respond. This is a life-cycle replacement from aging and incompatible equipment to an integrated COTS system. Maintenance and support costs for system components will be streamlined.

## 3.4 CORPORATE ENTERPRISE

### IT0004.1 FAIRFAX COUNTY MASTER ADDRESS SYSTEM

#### Description Project

This project provides the County with a Master Address System that is now a foundation for many County applications using parcel address information. Phase I a centralized database enables user agencies to draw parcel address data through a unique identifier which reduces the need to store parcel address data in user agency databases; rather agencies can link to the master address database to verify addresses and ensure conformity to the County address nomenclature standard. This initial phase accomplished the design and construction of the master database; compiling, reviewing, and scrubbing existing parcel address data, entering it into the database, and creating a basic data maintenance interface. Phase 2 is to develop an interface to a key enterprise system: IAS (real estate). Interfaces to other systems are under development separately. This project builds on analysis conducted on the County's addressing needs and the optimum solution to address those requirements.

#### Project Goals

The Master Address System provides a single repository or master list of site (parcel) addresses that currently includes over 365,000 addresses. Historically, most County agencies maintained separate address databases significant to their specific business needs. This project developed a centralized, standardized parcel address database containing all site parcel addresses for Fairfax County, providing correct, reliable, and easily available data to agency users. Integrity of geographic and parcel address data is assured by eliminating inconsistency and controlling data maintenance in one centralized system, which ensures valid and complete site addresses. Additionally the Master Address System enables Fairfax County to retain historical address data at a level not previously attained.

#### Progress to Date

In FY 2000, a study of address usage at key county agencies was completed. The study identified a number of issues to be resolved and proposed a preliminary database structure for the master address database. In early FY 2002 the Statement of Work was prepared and contractors brought on board to commence the first stage of this project which involved preparing the requirements report to document the address flow in the county and included efficiency recommendations to improve address assignment and tracking process. In FY 2003 the base database design was revised and enhanced in house by County staff. Work on design development continued in FY 2004 and FY 2005 which included completing the parcel address database construction, migrating and scrubbing address data, building an address maintenance application, and building interfaces between the master address repository and several key enterprise systems. Contractor support was used FY 2004 to assist in the data scrubbing, and in FY 2005 for the development of the address maintenance application. In FY 2006 several system enhancements enabled enhanced processing, maintenance of addresses, improved search capabilities, and links to the ICARE – tax assessment web site. Currently interfaces exist to FIDO and LDS, and an interface to the Department of Tax Administration's assessment database (IAS) is underway.

#### Milestones

- *Completed Construction of Address Database, April 2004*
- *Completed Address Scrubbing to Parcels, October 2004*
- *Completed Address Maintenance Application, October 2004*
- *Completed Interfaces to Key Systems, October 2004*
- *Master Address Repository in production, November 2004*
- *Completed planned system enhancements April 2006.*
- *Complete planned interfaces December 2008*

#### Project Budget

FY 2005 supplemental funding of $262,400 was provided to complete the creation of a centralized, standardized address repository that contains all Fairfax County situs (parcel) addresses. FY 2006 funding of $120,000 provided for necessary interfaces between the Mater Address Repository (MAR) and several existing agency databases. No funding is provided in FY 2009.

### Return on Investment

Major quantifiable benefits of the MAR project are the elimination of redundant data within the County, increased accuracy and integrity of parcel address data, and efficiency in redesigning the process of assigning physical addresses. The project ensured the availability of accurate, timely, online data to user organizations, and provided staff improved capability for demographics and statistical analysis of County data. Enhanced tracking of address assignment and approvals reduce staff hours required for the maintenance of redundant data and provides more shareable data across various county agencies. Reduced postage from returned mail with incorrect addresses, decreased reconciliation time, and elimination of various stand alone address databases are among other chief returns on investment.

## IT0004.2 GIS ORTHOIMAGERY UPDATE

### Project Description

This project is part of County's planned multi-year implementation of a Geographic Information System (GIS), and supports related project utilizing GIS data. GIS provides County staff and citizens the means to electronically access, analyze and display land related data. Aerial photography taken in 1997 served as the basis for preparing planimetric data (observable features such as building footprints, edges of roads, sidewalks) and orthoimagery (spatially corrected aerial imagery). The current program provides for the update of about 25 percent of the County's orthoimagery database each year enabling the County to keep closely aligned with the developmental changes and ensuring that the imagery is no more than four years old. Annual data updates are required to keep current with changes in the topography. This project also provides county staff in agencies such as Fire and Rescue, Department of Tax Administration, Police Department and Department of Planning and Zoning the ability to view County land at their desktops.

### Project Goal

Project goal is continued implementation a four-year update cycle for the orthoimagery covering all 407 square miles of Fairfax County and use the data to provide updated Digital Elevation Models and 5' contours.

### Progress to Date

Four-year imagery update cycle is up-to-date through FY 2007. The state planned to fly the County in 2006, but due to contractual difficulties the flights were delayed to 2007. The cost of upgrading the state imagery to county standards will be covered by the orthoimagery funds.

### Milestones

- *County has flown imagery in 2001, 2003, 2004, and 2005.*
- *The State flew the entire county in CY 2002 and 2007.*
- *The County paid to upgrade the 2007 imagery to 6" pixel resolution*
- *The County will not be flown in FY 2008, rather most of those funds will be used to cost share with the State when they fly over the County in FY 2009.*

### Project Budget

No new funding of orthoimagery was included in the FY 2009 budget. Existing funds will be used to cost share with the state for the FY 2009 imagery the state intends to acquire.

### Return on Investment

The Orthoimagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Multiple county agencies have benefited from the use of orthoimagery data and others are expected to utilize the data to enhance efficiency. Orthoimagery has been used successfully in property appeals cases and has allowed the county to effectively defend increased property assessments and help citizens with home assessment valuations. The imagery serves as a highly accurate quality controlled layer in the GIS to accurately locate features (e.g., building outlines, streetlights, storm water features). Orthoimagery is available in several public web applications, enabling users to view aerial imagery of any area of the County. These applications serve over a million maps per year enabling public users the ability to view parcel outlines, hydrography, as well as major and minor roads.

## IT0004.3 GIS OBLIQUE IMAGERY

### Project Description

This project provides oblique imagery that allows users to view the sides of buildings and structures in the County and measure their height. This imagery enables agencies such as the Departments of Public Works, Tax Administration, and Public Safety Agencies to reduce field time in assessing and planning, and enables staff to conduct analyses of buildings not previously possible. This imagery augments orthoimagery which is taken directly overhead and does not capture the sides of structures. Both sets of imagery are part of the spatial data in the GIS data warehouse, which gives County-staff access to a wide range of geo-spatial information about Fairfax County required in their business processes.

### Project Goal

The project goal is to obtain and provide oblique imagery for use by County agencies that require the data to support their business needs.

### Progress to Date

The GIS Oblique Imagery software is mounted on the Citrix server farm, and the data has been loaded on the County's Storage Area Network, making it available to County user with desktop connectivity to the Local Area Network. Additional file storage was acquired to handle the imagery.

### Milestones

- *The first oblique imagery was taken in 2003*
- *New imagery was flown in 2005, and 2007*
- *The next imagery acquisition will be in 2009*

### Project Budget

Existing funds continue the annual update photography and imagery conversion. No new funding available in FY 2009. GIS staff coordinates agency needs, specify requirements, perform QA, and provides training and desktop implementation. The updates to the imagery are performed biannually. The County will also be able to share the imagery with the town of Herndon and Vienna since they are within the boundaries of Fairfax County.

### Return on Investment

The oblique imagery project provides a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Oblique imagery proves to be particularly useful in public safety since it enables staff to view and measure the sides of buildings to determine risks, site lines, and other key features. It is also helpful to Fire and Rescue to detect small vertical features such as fences which could block fire fighter and fire hose access. Assessors are aided in the ability to determine the siding on buildings – an important component of an assessment. Oblique imagery holds the future potential of developing 3-D imagery since it contains building facades (skins) and elevation information, essential for effective representation of the actual areas.

## IT0004.4 GIS PLANIMETIRC

### Project Description

The original GIS base map for the entire County was developed from aerial photography flown in the spring 1997 to ensure high resolution and accuracy of base mapping. The GIS aerial base mapping provides mainly two different types of data sets – raster data, i.e., orthoimagery maps (spatially corrected aerial imagery) of the real world, and vector data, i.e., digitized planimetric and terrain relief features (observable features such as building footprints, edges of roads, sidewalks, streams, and the terrain shape from contour lines). Both sets of data are used widely as a back drop to variety of information and applications by County users and the public. County homeowners and businesses are able to compare tax assessments in their communities and access imagery for a variety of needs from across the county. While the County's orthoimagery data has been updated in 2001, 2003, 2004, 2005 and 2007 replacing old 1997 orthoimagery, the planimetric features, DTM, and topographic contouring data still remains old and thus does not reflect topographical change and development activities.

Through user surveys agencies have requested regular planimetric data update each year in conjunction with annual orthoimagery update of about one fourth area of the County. The aerial photography source for the data update is provided from the February-March 2008 flight missions. The planimetric updates are planned to begin in August 2008. Once the photography is flown, the raw imagery will be converted through a series of complex and sophisticated geospatial transformations. New and critically needed impervious surface features by key agencies will be digitized and included in the GIS database.

### Project Goal

Develop a program to update approximately 25% of the county's planimetric and topographic data annually. The data set will include impervious features such as roads, pools, basketball courts and driveways. It will also include 2' contours. This program is dependent on the availabailty of current aerial imagery.

### Progress to Date

A detailed statement of work was developed and sent out to bid to the five GIS contractors on the IT Services and Expert Assistance contract. The first year will capture the SE quadrant of the county. Results should be available in mid FY 2009. In 2009 an additional quarter, the SW quadrant, will be captured.

### Project Milestones

- *Second Quarter FY 2008 – SOW distributed*
- *Fourth Quarter FY 2008 – contract awarded*
- *First quarter FY 2009 – work initiated*
- *Third Quarter FY 2009 – delivery of first quadrant*
- *Fourth Quarter FY 2009 – initate work on SW quardrant*

### Project Budget

This project is jointly funded by DPWES and DIT through fund 104. Work in FY 2008 was undertaken with existing funds. In FY 2009 funding of $158,840 is provided for continued support.

### Return on Investment

The planimetric, DTM, and topographic contouring at 2' contour interval data update project will provide a combination of cost-savings, enhanced revenue and non-quantifiable benefits. Planimetric, DTM, and contour data has proved extremely valuable in a wide range of county operations. Over the years GIS staff has designed and implemented many engineering mapping projects for several key agencies, DPWES, Park, and also Fairfax County Water, requiring 1' or 2' detailed accuracy DTM and contours data resulting in savings of tens of thousands of dollars. For example, GIS staff provided 1' contour data for flood plain mapping of New Alexandria and Bellview project. Typically design and development of high precision engineering project takes about four to five months provided latest leaf off imagery is available. This planimetric, DTM and contour update project data makes a tremendous impact as it will allow agencies to readily access data needed for engineering design project anywhere in the County, which saves time and money and enhances response, efficiency, and overall productivity. Planimetric data will be an important component of mapping in the County's new Computer Aided Dispatch system. Additionally, capture of many impervious surface features not currently present in the GIS enterprise database is a critical requirement for effective planning, designing, and management of storm water projects. Overall cross agency data sharing for numerous applications will become more cost effective and efficient.

## IT0006 TAX / REVENUE ADMINISTRATION

### Project Description

This project provides for the information systems development and technology infrastructure required to redesign the County's tax and revenue systems. The Tax/Revenue project facilitates a simpler process for citizens to fulfill their tax obligations and pay for services by modernizing the internal processes used for assessing, billing, and collecting County taxes and other revenues. In FY 2002, the County began replacement of the aging real estate mainframe system with a commercial-off-the-shelf (COTS) called Integrated Assessment System (IAS). Implementation of IAS allowed for a comprehensive overhaul of many existing functions such as real estate administration, account maintenance, assessment, exemptions and adjustments, accounts receivable, and billing. The core system was completed in FY 2004.

### Project Goals

Project goals continue to focus on tax and revenue modernization by implementing the remaining web-based modules of the client server real estate system originally purchased in FY 2002. In FY 2009, the implementation of additional product modules will enhance the efficiency of property assessing and inspection by field staff; will enable a coordinated approach to managing public inquiries and correspondence; will streamline common real estate transactions through customized forms; and will provide the core technical architecture to enable the other interactive modules to operate.

### Progress to Date

The assessment administration, CAMA (assessment), accounts receivable and delinquent collection modules of the client server tax system are operational and fully integrated with the County's cashiering system. These modules comprise the core tax system. Implementation of the web-based product, iasWorld, is ongoing.

### Milestones

- *Implementation of IAS modules with the exception of the Delinquent Collections Tracking product — February 2004*
- *First installment billing for tax year 2004 using IAS, June 2004*
- *Implementation of the iCare internet real estate property information lookup tool (Internet plug in for IAS) Integration of IAS with the department's cashiering COTS software Revenue Collector, June 2004*
- *Installation of the WEB citizen inquiry tracking system module of iasWorld, iRespond, June 2007*
- *Implementation of the web-based real estate system iasWorld, June 2008*

### Project Budget

No additional funding is provided in FY 2009.

### Return on Investment

The remaining IAS product for installation (iasWorld) will permit improved customer service without the addition of staff. Headcount can be held constant as inquiries and correspondence increase as a result of population growth, changing demographics, and changes in real estate assessments and rates. Citizen inquiries will be more effectively managed, and response turnaround times improved. In addition, real estate appraisal staffs can more accurately collect and record property characteristic data from site inspections, as staff will have the ability to input and transmit data from the field. Improvements in data quality and currency will better equip the County to provide more equitable assessments, defend appealed assessments, and improve the timeliness of revenue generated from the real time recording of property improvements. In addition, the new process eliminates redundant data entry work by support staff, as web-based screens will have consolidated fields from several screens in the client-server system. By operating the real estate application within the County, staff can ensure sufficient security of County data communicated over the internet and monitor the application on a 24/7 basis for optimal availability and ensure secure access.

## IT0008 LIBRARY PROJECT

**Project Description**
This project enabled the Library to expand capacity to manage growth in demand for library services, provide access to Library resources and customer accounts, as well as other library catalogs, electronic documents, and remote databases without constraints of time or location; and provide decision support information for library management to facilitate the growth of the digital library by linking bibliographic records to stored digitized documents. This project included the installation of 45 self-checkout stations in 21 Libraries. Checking out books is the most labor-intensive aspect of face-to-face customer service for the Library. Self-check out enables the libraries to maintain customer good service in the face of increasing demand without adding staff. To adequately serve FCPL users, the new systems support circulation; public and staff access to the Library's catalog and other online databases including digital repositories; acquisitions; bibliographic control; inventory control; serials management; interlibrary loan and document delivery; and management information reporting.

**Project Goals**
This Library project was designed to more fully support circulation functions, public access to the catalog and online information services through the Internet, financial accounting, and management information. Network architecture upgrades, equipment upgrades, and enhancements were also included.

**Progress to Date**
The completion of the self-checkout project, wireless installation at the five pilot regional libraries using existing public networks circuits was accomplished in April 2006. Installation at the remaining 15 libraries was deferred pending vendor selection. In September 2007 wireless installation plans for the fifteen libraries were approved. The Wireless Access project was completed in March 2008. All Fairfax County Public Libraries now provide wireless public access to the Internet.

### Milestones

**Self checkout machines:**

- *RFP for self checkout machines issued, November, 2005*
- *Contract awarded, March 2006*
- *Software Installations completed, October, 2006*
- *Hardware(monitor extension poles) completed, November 2006*
- *All branches went live, December 2006*

**Wireless access:**

- *Equipment/ software specified to support wireless public access in libraries, November, 2005*
- *Equipment/ software ordered, December 2005*
- *Chantilly Library site survey for access points completed; cabling completed, January, 2006*
- *Equipment and software received, January, 2006*
- *Reston Regional Library site survey for access points completed, February, 2006*
- *DIT Networking staff completed the wireless installation at the five pilot regional libraries, April 2006*
- *DIT approved wireless installation at the remaining 15 libraries. August 2007*
- *Building surveys have been completed and equipment ordered to complete wireless access project in spring 2008.*
- *The Wireless Access project was completed in March 2008. All Fairfax County Public Libraries now provide wireless public access to the Internet.*

### Project Budget

In FY 2006 funding of $402,336 provided for the installation of 48 self-checkout stations in 20 Libraries. Checking out books is the most labor-intensive aspect of face-to-face customer service for the Library. In addition, in FY 2007 funding of $100,000 provided for wireless access to the Internet on the Library's Public network for customers in all branches. No additional funding requested in FY 2008 or in FY 2009

### Return on Investment

Though circulation is increasing, the Library will not need to add circulation desk staff to handle the additional workload. With the opening of the new Oakton and Burke Center libraries 9/9.0 positions will be transferred from existing branches to handle circulation functions. By having the customer complete the scanning of barcodes, moving and lifting books, staff

is mainly engaged with aspects of the transactions such as solving customer problems, handling money, and performing less routine checkout procedures. Customer satisfaction rates are expected to increase because lines move more quickly as customers can manage their own checkout. Wireless Internet access at Libraries helps the County meet the demand for increased Internet access by Library patrons, at a much lower cost, and introduce additional patrons to the range of available Library services.

## IT0011.11 ELECTRONIC ACCOUNTS PAYABLE SYSTEM

### Project Description

This project provides a solution that meets the County's goals for an electronic accounts payable process within the current infrastructure using adaptable technology to meet future requirements. Additionally, it provides for a phased-in implementation with minimum impact on existing business processes. The project will develop a methodology to utilize new accounts payable electronic processing methods to dramatically reduce the amount of time and effort it currently takes to process accounts payable transactions. The creation of new methodologies will provide in-depth data analysis, targeted audit procedures, and improved internal controls to identify and correct weaknesses in the county's accounts payable processes.

### Project Goals

This project was initiated to improve the operating efficiency of the entire countywide decentralized accounts payable process, and at the same time achieve the Board of Supervisors' mandates to reduce paperwork and support telework. These goals will be achieved by maximizing the County's use of proven imaging, e-signature, and workflow technologies to replace reliance on paper document processing. In addition to the improved process efficiencies and cost savings expected, it is anticipated that this project will increase countywide internal controls and management reporting by utilizing automated reporting techniques to improve analysis of the County's accounts payable processes.

### Progress to Date

The electronic invoice package selected as the solution, Imagitek's Prodagio A/P, was installed in the production environment and the first go-live agency (DHR) was October 1, 2007, with rollout to the two other proof-of-concept agencies (DIT and FMD) followed October 9th and October 15th, 2007.
The County has proved the selected solutions' ability to meet the requirements with the roll to other county agencies beginning in February 2008 and scheduled for completion by June 2009. The County has determined the next phase (Phase II) of the project is to incorporate the processing of non-purchase order documents into the application.

Fairfax County Public Schools (FCPS) is conducting their own proof of concept project for purchase-order related documents and are providing their own funding.

### Milestones

- *Gap Analysis Document, August 2004*
- *Statement of Work Issued for Accounts Payable Expertise, March 2005*
- *Contract for Accounts Payable Expertise, June 2005*
- *Business Process Redesign Document, November 2005*
- *Requirements Document, February 2006*
- *Statement of Work Issued for Service/Products to Meet Requirements, June 2006*
- *Contracts for services/products/hardware, November 2006*
- *Proof-of-Concept Implementation of Proposed Phase I Solution, October 2007*
- *Documented Proof-of-Concept Solution, November 2007*
- *Countywide- implementation of Phase I – completion June 2009*
- *Documented countywide solution- July 2009*
- *Beginning implementation of Phase II, February 2009*
- *The date of final Countywide implementation of Phase II – February 2010*

### Project Budget

The FY 2008 funding of $520,000 will continue prior year efforts to implement a decentralized electronic accounts payable process from within the Department of Finance to County agencies. By using imaging software, e-signature capabilities, and workflow technology, the electronic accounts payable solution improves operational efficiencies in the County's financial processes. No new funding is available for FY 2009.

### Return on Investment

This initiative requires the integration of the County's financial and procurement systems and will result in a paperless work process and enhanced management reporting. The greatest financial returns from implementing the electronic accounts payable process will be from reduced staff processing, document filing retrieval time, copier charges and storage costs. According to industry standards, the cost required to scan and index items is less than half of that required to manually file and retrieve folders of information. Based on the county's cost-benefit analysis, the reduction in staff processing time and copier costs would result in an annual savings of more than $2 million.

In addition, more than 800 boxes of records are archived annually, which currently require 1,600 square feet of storage space. Based on the monthly standard rate of $22 per square foot for storage, the reduction in storage cost will save more than $400,000 annually. Further faster invoice processing will maximize opportunities to realize vendor discount terms.

## IT0011.13 AUTOMATED BOARD MEETING RECORDS

### Project Description

This project will design and implement a document-imaging program in the Clerk to the Board's Office, which will enable the Clerk to the Board's Office to electronically capture Board of Supervisor meeting records and make them available on-line to the public and county staff. In addition, this project plans to digitally scan Board meeting records from the last five years for on line availability.

### Project Goal

To electronically capture Board of Supervisor meeting records and make them available on-line to the public and to County staff.

### Progress to Date

Currently the project—is defining system and user requirements. Additionally, the Clerk's office is evaluating the possibility of partnering with the County's Department of Cable Communications and Consumer Protection. The ultimate goal is to incorporate the Board of Supervisors' meeting videos with the agendas to create a robust easily accessible and searchable on-line record which is easily searchable. Project will utilize the enterprise infrastructure for electronic records management.

### Milestones

- *Finalize requirements and purchasing strategy - April 2008*
- *Develop, design, test, Mach 2009*
- *Deployment, training and implementation, June 2009*

### Project Budget

FY 2006 funding of $200,000 was provided to plan, design, and implement a document imaging program in the Office of the Clerk to the Board's. No additional funding required for FY 2009.

### Return on Investment

This initiative is expected to increase the efficiency of producing the board matters package including streamlining the process of getting the records on-line; provide a viable, accurate document system for older and one-of-a-kind documents; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

## IT0022.9 CORRESPONDENCE TRACKING AND MANAGEMENT SYSTEM

### Project Description

The Correspondence Tracking and Management project enables County agencies to capture communications, track contacts, events, and complaints in order to enhance staff and interagency communication. Since it s initial launch in 1999, this project continues to expand the implementation of a proven Commercial-Off-The-Shelf (COTS) product known as Intranet Quorum (IQ) which has been successfully deployed in several County agencies. IQ is a Correspondence Tracking and Management System that provides an integrated approach to delivering services to citizens, colleagues, and staff. In addition, IQ offers a variety of data points for easy and complete reporting.

### Project Goals

Project goals include enhanced communication between County staff, departments and agencies. The system provides an integrated approach to service delivery enabling users to link to other areas within the database, as well as extend outside the IQ system through scheduling, scanned images, email, fax, and incoming/outgoing postal mail. The project enables agencies to automate business processes and workflows, reduce duplication of effort, and enable the sharing the information between agencies using present e-mail methods. These benefits are amplified by the delivery of a seamless constituent interface and enhanced customer service.


### Progress to Date

IQ was initially deployed at the offices of the Board of Supervisors, the County Executive, and the Clerk to the Board. Expansion to other agencies (or portions of agencies) has been on going and currently there are ten additional agencies utilizing the software. Over time address data from the Geographic Information System (GIS) has been utilized with IQ to increase agency productivity.

To stay current with the County's technical standards, IQ has undergone a total re-write reflecting the County's preferences for web application language, Oracle database versions, Enterprise platform standards, and desktop software suite. Demonstrating both fiscal responsibility and agency business awareness, only a portion of the existing user base has been migrated to the new version – IQ3. This allows staff to perfect their migration strategies and application knowledge as well as minimize impact on the agency's productivity.

The project has concentrated on preparing a stable production environment for user base migration from one version of IQ to another. In addition, the custom application used by the County Executive's Office to track legislative activity during the General Assembly sessions, was re-written to meet county programming standards. This upgraded legislative monitoring product was utilized during the 2008 Virginia General Assembly and will be expanded in FY2009 to include a Federal Legislative component.

A business process analysis involving agency staff and the vendor is underway for enhanced application in order to effectively automate business workflow processes and provide templates for future needs.

### Milestones

- *Board of Supervisors and County Executive – correspondence, Implementation 1999*
- *Department of Consumer Protection, Implementation, 2000*
- *Office of the Clerk to the Board, Implementation, 2000*
- *Office of Public Affairs, Implementation, 2002*
- *Human Rights Commission, Implementation, 2002*

- *DPWES – Office of the Director, Implementation 2003*
- *Alternative Dispute Resolution division, Implementation, 2003*
- *Department of Transportation, Phase One Implementation , 2004*
- *Police – Review business process, April 2004*
- *GIS, Geographic infrastructure and interface development/implementation for selected IQ accounts, April 2004*
- *Multi-agency, Roles implementation and workflow enhancements, January 2005*
- *DPWES – Urban Forest Management – Implementation, 2005*
- *DPWES – Solid Waste – Business process analysis and complaint tracking, 2005/2006*
- *Purchasing and Supply Management – Correspondence tracking – Business processes analysis and workflow development - 2006.*
- *FY2008 Solicitation requests automation phase 1 completed.*
- *DPWES – Hauler Complaint tracking – Business process analysis, workflow development and implementation, 2007*
- *County Executive, Legislative Monitor, 2001- upgraded 2007*
- *DPWES – Land Development FOIA tracking, Implementation, 2008*

### Project Budget

No funding is provided for FY 2009. Existing projects funds will be used to maintain the application.

### Return on Investment

Successful implementation of this service-enhancement project will provide enhanced communications between county staff, departments, and agencies, allow agencies to share and monitor the status of projects, responses, and track other issues and events as those items progress through the County processes. The project enables agencies to automate business processes and workflows, reduce duplication of effort, and enable the sharing the information between agencies using present e-mail methods. These benefits are amplified by the delivery of a seamless constituent interface and enhanced customer service. By implementing a proven product, agencies will forego the expense and effort of researching and evaluating similar CRM solutions. In addition, this solution does not preclude installations of applications that support the County's IT architecture, or interact with other agencies' CRM applications.

## IT0024.1 PUBLIC ACCESS TECHNOLOGY - KIOSK

### Project Description

This project provides funding for initiatives that improve public accessibility to government information and services. A comprehensive approach is employed to ensure efficient infrastructure capable of supporting multiple business solutions. In addition to enhancing customer service via their convenience and versatility, public access technologies are capable of limiting staff involvement in providing basic information, thereby allowing staff to perform more complex tasks and respond to requests for more detailed or specialized information.

The multimedia kiosk is one of the key technologies in the e-government strategy deployed by Fairfax County to assist citizens with access to government information and business transactions. A kiosk is a computer that is placed in a structure to dispense information and services. The kiosk application known as the Community Resident Information Services (CRiS) provides access to regional information in convenient locations and also allows citizens to conduct business. Two kiosks were initially deployed in August 1996. Currently, there are 28 kiosks operational in the County with more to be deployed in FY 2009. These kiosks have accounted for over 11.8 million citizen inquiries to date.

### Project Goals

In FY 2009, Kiosk enhancements will expand the range of information and applications available through the web and Interactive Voice Response (IVR) channels. Other objectives include deployment of additional kiosks to expand public access, redesign kiosk information architecture based on redesigned county web site and continue the integration of card reader functionality that could enable the kiosks to accept credit card payments.

### Progress to Date

- Progressed from a pilot project to a complex, operational program.
- Evolved from a County to a regional kiosk program.
- Continued growth in the area of additional business transactions.
- Incorporated interfaces to state-level business transactions.
- Migrated to a much more user-friendly structure.
- Continued with significant content growth.
- Enhanced technical capabilities of kiosk program in the areas of printing, mapping, location information, user instructions and operations.
- Implemented Metropolitan Washington Council of Government (COG) Commuter Connections on CRiS.
- Added two new partners; INOVA and Economic Development Authority
- Redesigned the application to achieve a new look and feel.
- Developed a video in-house for promoting CRiS.
- Integrated the current application with the Web by introducing a Netkey browser.
- Introduced advanced sound control.
- Completed a feasibility study with DMV to integrate DMV's extraTeller on CRiS.
- Redesigned information architecture for Fairfax County and all our partners.
- Completed replacement of kiosk hardware that included CPUs, printers, monitors, etc., at each kiosk location in FY 2003.
- Completed replacement of enclosures with new enclosures that offer components like keyboard, scanner, and credit card reader etc. in FY 2003.
- Completed Partnership with Town of Vienna and Town of Herndon.
- Networked INOVA kiosk
- Expanded Regional content.
- Continue redesign of hardware/software architecture in order to address security issues in FY 2006.
- Continue enhancement of the GIS and Location information portions of CRiS application in FY 2006.
- Complete deployment of sound domes in FY 2006

- Deployed County's Kiosk in Tyson Corner Community Center FY 2006
- Enhanced the security of kiosk in FY 2007.
- EDeployed County's Kiosk in Oakton library FY 2008.
- EStarted re-design of CRis Application

### Milestones

- *Deployment of additional kiosks in FY 2009.*
- *Continue upgrading of development software.*
- *Continue redesign of information architectures for all partners.*
- *Add new Partners.*
- *Integration of credit card reader with CRiS application using a web application.*

### Project Budget

A portion of the $208,190 FY 2009 funding for E-Government will be used for consulting services, software and hardware acquisitions and training. The project requires on-going support from Public Access staff and Telecommunications staff to help plan and re-configure new systems, and to help trouble-shoot telecommunications system problems.

### Return on Investment

This project will continue to provide a single information architecture and supporting infrastructure for all platforms and continue to provide new information and e-services to the public. It will further expand the capabilities of the newly implemented content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents. The County will be able to build applications quicker and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources needed to provide basic information, thereby allowing staff to be deployed to more complex tasks; as well as to respond to requests requiring more detailed or specialized information.

## IT0024.2 PUBLIC ACCESS TECHNOLOGY - INTERACTIVE VOICE RESPONSE

### Project Description

This project provides funding for initiatives that improve public accessibility to government information and services. A comprehensive approach is employed to ensure efficient infrastructure capable of supporting multiple business solutions. In addition to enhancing customer service via their convenience and versatility, public access technologies are capable of limiting staff involvement in providing basic information, thereby allowing staff to perform more complex tasks and respond to requests for more detailed or specialized information.

Interactive Voice Response (IVR) technology program develops custom interactive telephone applications that can access and update data in a variety of County databases, in addition to providing static information in a timely, convenient manner. The IT project has been deployed to allow citizen's access to Fairfax County services and information via touch-tone telephone service. For those citizens who do not have access to the Internet, the project was established at the request of the Board of Supervisors "to enable the County's customers to conduct business with the County wherever and whenever it is convenient for the customer." It is one of the foundations for enhancing public access to government information and business transactions.

### Project Goals

The primary goal is to continue to apply text-to-speech technology for certain applications determined to be resourceful and aligned with e-government goals. Interactive Voice Response enhancements include the continued integration of Web and IVR via XML technology for public use.

### Progress to Date

The DIT IVR currently answers more a million calls annually. The system is available approximately 24 hours a day to interact with citizens, giving citizens another option for conducting business with the County after regular business hours. By handling the more routine calls, the IVR allows staff to concentrate on those calls that most need personal attention. It also allows access to a great deal of information even if citizens call after hours or on weekends.

Current Applications:

CEX: Medical Registry services in 7 different languages

COURTS: Circuit, General District & Juvenile, Court Information Line (General Information, Traffic and Criminal Fine Payment by credit card, access to specific cases),

CSP: Consolidate Services Planning survey of services provided,

DPWES: Building Inspections (Requests and Cancellations),

DPWES: Permit/Plan/Building Inspection Status Inquiry,

DPWES: Scheduling Special Pickups of brush or bulk items using customer address,

DTA: Real Estate Data (spoken data and FAX on Demand by property address),

DTA: Real Estate and Personal Property Tax Payments

FS: Survey of services to check the quality of service

FIRE: Fire & Rescue's Media Information Line (after-hours fire incident updates),

HCD: Housing & Community Development's Housing Waiting List (gives position on list),

HEALTH: Health Department Information and departmental transfers,

HR: County jobs availability and submitted resume status.

LIBRARY: Library Information Line (Locate Libraries by ZIP code, phone numbers, directions),

OFC: Office For Children Training and Class schedules registration Line,

OPA: Public Affairs 324-INFO Line (general County information, phone number search),

POLICE: Victim Services Information Line (query of offender release date information),

DIT: IT Help Desk - for all County computer related problems.

### Milestones

- *Translation to multiple languages*
- *Pilot an application on the Avaya platform.*
- *Add text-to-speech functionality to various applications*

### Project Budget

A portion of the $208,190 FY 2009 funding for E-Government will be used for consulting services, software and hardware acquisitions, and training. The program requires on-going support from E-Gov and telecommunications staff to plan and configure new systems, and to trouble-shoot telecommunications system problems.

### Return on Investment

This project will continue to provide a single information architecture and supporting infrastructure for all platforms to deliver new information and e-services to the public. It will further expand the capabilities of the newly implemented content management system in order to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents. The County will be able to build applications quicker and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources needed to provide basic information, thereby allowing staff to be deployed to more complex tasks; as well as to respond to requests requiring more detailed or specialized information.

## IT0024.3 E-GOVERNMENT - INTERNET/INTRANET INITIATIVES

### Project Description

This project provides funding for initiatives that improve public accessibility to government information and services. A comprehensive approach is employed to ensure efficient infrastructure capable of supporting multiple business solutions. In addition to enhancing customer service for availability anywhere, any time, public access technologies are capable of reducing staff involvement in providing basic information and transactions, thereby allowing personnel to perform more complex tasks and respond to requests for more detailed or specialized information.

Internet/Intranet initiatives provide significant and wide-ranging opportunities to use technology as a means of making information more readily available to the public. Initiatives include research and development of emerging technologies, expansion of Web applications, improvements in search and navigation, integration with internal systems and other public access channels, and sustaining infrastructure.

### Project Goals

The project's vision will be achieved by providing new information and services on all platforms, while continuing to build on existing information architecture. The planned functionality will be delivered in support of the County's taxonomy of information and services, using a single supporting infrastructure. The solution is based upon a single content repository for all platforms and agencies. The repository enables various features of content management to provide accurate and reliable information, provide additional search capabilities on the public web site, and enable information sharing. The project includes implementing standards and processes for information engineering so that the same applications and data is used and delivered across multiple platforms, while providing support for county agencies in the development of Web content and applications.

### Progress to Date

The County's Public Web site has been extraordinarily successful. The County site receives approximately 52,445 visitors per day, which equates to an average of 297,013 page views per day and an average of 1,632,298 hits per day. Approximately 55 County agencies have a presence on the site. The functionality of the site expanded significantly during the past 12 months with the addition of significant content and information. New and updated business transactions have also been added during this period.

Additionally, the county extended its presence by launching content on three social networking sites:

Facebook (http://www.facebook.com/group.php?gid=7901829756),

MySpace (http://www.myspace.com/fairfaxcounty.government), and

YouTube (http://www.youtube.com/user/fairfaxcountygov).

**1 - Public Web Site Search and Navigation**

Web Content Management is Phase II of the Public Web Site Redesign. During the first phase, over 120 content contributors were involved in migrating information from the old site to the redesigned site within a six-month period. The Project team defined a basic Information Architecture for the site, which was then validated by 14 citizen and business focus groups. A "look and feel" template was developed for the redesigned site and migration of over 20,000 files to the new templates was coordinated by the project team. Most importantly, the establishment of working inter-agency groups for the development and dissemination of standards related to site design, application development and implementation proved critical in the project's success. As part of the redesign, a "Contact Us" database was implemented, which provides citizens with direct contact information to county staff from a single search interface. Additionally, site search functionality was enhanced.

In FY03, the main subject area pages (Living, Doing Business, Visiting and Government) were developed. Enhancements of the site included: News & Information section, Emergency Information, Local Weather and improved navigation. In FY04, a robust and secure environment that facilitates delivery of integrated and accurate information to citizens was built. In FY05, several new applications were added including Child Care training, My Neighborhood applications, Kids and Teen portal, Seniors and Disability portal, Crime Mapping, and revamped DTA e-pay and Consumer Protection pages. In FY 2006, a new search on the public web site was implemented making site accessible via mobile devices. In FY 2009, the WEB site will be updated with a new look and navigation scheme.

**2 - Infrastructure Architecture and Management**
The following Internet/Intranet Infrastructure initiatives are on-going:

- *Implemented a load balance sever farm for public web site*
- *Secured network settings on all 34 servers to minimize risk of intrusion*
- *Implemented a statistical reporting system for both Internet and intranet servers*
- *Refined the server monitoring system*
- *Determine and implement a supporting Infrastructure for .NET applications*
- *Develop .NET standards based on the implementation of .NET projects*

**3 - Interoperability**
As a participant in the Government without Boundaries cross-jurisdictional project, Internet Services staff installed ASP.Net and created a Web Service, which generates XML data from a SQL database using a collaboratively defined schema. This project allows Fairfax County to share park-related data with other local, state, and federal jurisdictions. Additional critical work on regional interoperability for homeland security linking Emergency Operations Centers and CAD functions began in FY 2005 with implementation of a pilot prototype in FY 2006. In FY 2009 efforts will continue with the Department of Homeland Security towards development of a data exchange hub for public safety computer aided dispatch information in the metropolitan region.

**4 - Infoweb Redesign**
The look and feel of the main page of the Infoweb (Intranet site) was redesigned, and continues to be enhanced. Unlike the Public Web Site redesign, this is an on-going process that links with agency operational improvements.

Approximately 55 County agencies now have a presence on the site, offering more than 11,000 HTML documents, 12,500 PDF documents, and 15,000 images on the Internet site. Most agencies have Web content contributors. Internet Services staff supported content creation efforts for those agencies without a dedicated Web presence. The County Infoweb will continue to be updated with additional access to enterprise data and interactivity. It will also be expanded to become a viable alternative for full transaction-oriented applications. The addition of new information and increased business functionality is essentially an ongoing project. Based on conversations with a wide range of County managers, it is also expected there will be numerous concurrent application development requests from a dozen or more agencies for core Web-enabled applications as the benefits of the technology become more widely recognized. These requests for support are handled on an as-needed basis based on priority, visibility and functionality, and highest Return on Investment

**5 - Web Content Management**
Web Content Management will deal with refining the site's information architecture, defining and implementing replicable workflows, as well as designing and implementing the supporting infrastructure for Web content contribution. A COTS solution was purchased and is being implemented.

**6 - e Services**
Internet Services prototyped new application development platforms and developed standards and best practices for the current environment. DIT supported other agencies in the development of Web content and applications. New and updated business transactions supported by the Internet Services staff over the last year include:

- *HS/OFC Institute for Early Learning Training (IFEL)*
- *HS/OFC Child Care Management System – Modification in FY04*
- *ICARE DTA Real Estate Assessment and Information Query*
- *DHR Applicant Information Management System (AIMS)*
- *Public Meeting Calendar*
- *GIS Digital Map Viewer – Modified in FY04*
- *DTA ECheck – Modified in FY04*
- *Contact Us – Modified in FY04*
- *Library Historical Newspaper Index*
- *Library Booklists*
- *Library Picturebooks*
- *DTA TaxEvaders*
- *HS HIPPA*
- *DPZ eComplaints – Modified in FY04*
- *Infoweb – IBusiness Enterprises (iBE)*
- *Infoweb – DFS Independent Living Program (FILP)*
- *Infoweb – DAHS Facility / Site Profile*

- *Infoweb – DFS Account Receivable (FAMSAR)*
- *Infoweb – HS eAssist - Modified in FY04*
- *Infoweb – HS FCPMS / IAS - Modified in FY04*
- *County WEB – Kids and Teens portal, FY05*
- *County WEB – Crime Mapping, FY05*
- *County WEB – Child Care training, FY05*
- *County WEB – My Neighborhood, FY05*
- *County WEB – Seniors and Disability portal, FY05*
- *County WEB – Sheriff Service Civil Process, FY06*
- *County WEB – Enterprise Search, FY06*
- *County WEB – Public web site accessible via wireless, FY06*
- *County WEB – Boards, Authorities and Commissions, FY06*
- *County WEB – EPartnerships, FY06*
- *Infoweb – Courts Electronic Wayfinding – Circuit Court Docket, FY06*
- *Infoweb – Sign-in and Course Evaluation System (SACES), FY06*
- *Infoweb – Courts Scheduling System, FY07*
- *Infoweb – RSSFeeds, FY07*
- *County WEB – Athletic Facilities Application Requests (AFAR), FY07*
- *County WEB – FAQ's, FY07*
- *County WEB – RSSFeeds, FY07*
- *County WEB – Podcasting, FY07*
- *County WEB – Special Needs Registry, FY08*
- *County WEB – Social Needs Registry, FY08*
- *County WEB – Library Audio Books , FY08*
- *County WEB – Library Video, FY08*
- *County WEB – Contact Us - modified, FY08*

### Milestones

- *Provide additional search capabilities on the public web site*
- *Enhance the public web site to make it more compliant with Section 508 for accessibility*
- *Continue to provide support to county agencies for e-gov initiatives*
- *Continue support and expansion of e-payment transaction*

### Project Budget

A portion of the $208,190 FY 2009 funding for E-Government will be used for consulting services, software and hardware acquisitions, and training. The project requires on-going support from Public Access staff and infrastructure staff to help plan and re-configure new systems.

### Return on Investment

This project will continue to provide single information architecture and supporting infrastructure for all platforms and new information and e-services to the public. It will further expand the newly implemented content management system to improve automated workflow, revision control, indexing, search and retrieval for enterprise systems. The project will further improve the search capability for citizens and constituents while enabling the County to build applications faster and more efficiently by maintaining reusable components. Public access technologies will minimize staff resources necessary for providing basic information, thereby allowing staff deployment to more complex tasks requiring more detailed or specialized information.

## IT0043 HUMAN RESOURCES INFORMATION SYSTEM

### Project Description

This project was designed to provide interim improvements as a first step towards a strategic goal of achieving human resource management initiatives such as improved end-user functionality, succession planning and knowledge management using technology architecture that can interoperate with an integrated suite of enterprise applications. This strategic goal has now broadened into a multi-year, County government and Fairfax County Public Schools initiative that will modernize the entire portfolio of enterprise systems that support finance (FAMIS), human resources (government: PRISM/schools: LAWSON), budget (BPREP), procurement (CASPS) and related administrative applications with an integrated

approach that has the flexibility to meet current and future requirements. This effort is being realized through Project IT0079, Legacy Systems Replacement Project which will assume the remaining initiatives and funding in the Human Resources Information System in early FY 2009.

### Project Goals

Major project goals have been incorporated into Project IT0079, Legacy Replacement Project and include an integrated financial/procurement/human resources/budget suite that will support agencies in the delivery of government and school services and activities, take advantage of best practices, provide the opportunity for multi-faceted data-driven decisions, significantly improve the efficiency and effectiveness of existing processes, enhance e-government initiatives and promote telework opportunities, and aid in the transformation and standardization of financial and human resource processes. This initiative will foster an environment of change and redesign to allow for more efficient and effective processes. The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data.

### Progress to Date

Enhancements to the existing human resource operations include improved reporting capabilities for agencies, and improved look and feel for a variety of functions like time sheet, and on-line pay advice, and the implementation of a succession planning and knowledge management suite, and on-line benefits enhancement. As noted earlier, by early FY 2009, it is expected that the efforts and future progress in the human resource area will be continued in Project IT0079, Legacy Systems Replacement Project.

### Project Budget

FY 2006 and FY 2007 carryover funding continued support of refinement of requirements, first stages of the business process improvements, acquisition of tools to improve current system usability, and consultant costs. No new funding available; existing funding will be moved to Project IT0079, Legacy Systems Replacement Project by early FY 2009.

### Return on Investment

Improvements in reporting and transactions in PRISM enhance the ability for agencies to have access to critical information without using programmers to develop certain routine paper based reports.

## IT0072 CRM – CALL CENTER INTEGRATION

### Project Description

This project provides the foundation for a comprehensive call center technology solution which will be based on an open architecture, providing an opportunity for sharing process, resources and critical information across multiple Fairfax County call centers. This project will also address the service needs by remedying existing business problems while improving operation efficiency and upgrading the technology infrastructure for all county call centers. The milestones are the approval of additional funding, actual procurement and subsequent implementation of these tools.

### Project Goals

The goal of this project is to implement a comprehensive CRM application which will use industry standard call center technologies and incorporate existing county automated tracking systems. The objective of county call centers is to provide timely and appropriate assistance based on the citizens' needs. Additionally the goal is to provide an opportunity to leverage call center resources through virtual sessions. This project does not build or consolidate existing call centers nor create a central county call center site. The concept provides a central technical architecture and infrastructure foundation supporting call center processes, integration, and sharing of resources as appropriate in improving overall services. This project is complimented by the telephone modernization project, which will improve the telephony technology foundation needed to distribute and track calls.

### Progress to Date

A project steering committee consisting of DIT and agency staff that use or have interest in call center functionality has been established to manage the implementation and integration of the CRM software within the County's infrastructure environment. CRM application was deployed to support three Office

of Public Affairs customer center sites. Frequently requested information and telephone numbers for county services and home owner association data has is available in a centrally used knowledgebase to support consistent distribution of information.

### Milestones

- *OPA Pilot Implementation completed.*
- *Agency Assessments – March, 2008*
- *Agency Integration/Training – June, 2008*
- *Agency Deployments – December, 2008*

### Project Budget

FY 2009 funding of $300,000 will support further deployment to existing agencies.

### Return on Investment

Return on Investment is realized from increased productivity from automation and/or streamlining of telephone processes, improved and reliable data capture required for mandatory service reporting, enhanced citizen communication and issues resolution, as well as delivery of improved operational efficiencies.

Call center technology solutions based on widely adopted standards and refined processes supports a more efficient work force. Deployment of scalable solutions to County call centers provides opportunities for improved usage, configuration, training, citizen online access and improved communication. Customer service representatives optimize time and efficiency by accessing a county wide standard knowledgebase which enhances service delivery. At the same time, the public's interaction with county staff is enhanced by interacting with better equipped and better informed work force able to respond quickly and resolve problems effectively.

## IT0074 DATA ANALYSIS REPORTING TOOL

### Project Description

This project provides a modern capability for reporting on financial data from the County's legacy financial systems. The Data Analysis Reporting Tool (DART) replaces existing ad-hoc, stovepipe reporting with a unified reporting methodology and capability. Financial information from the County's financial, procurement, and payroll systems are integrated in a data warehouse, and reporting features provide the users the capability to generate on-demand charts, reports, inquiries, and analyses.

### Project Goals

The goal of the project is to maximize the analytical functionality of existing financial and performance data. The solution enables management to target discrepancies, inefficiencies, and extraordinary line items for cost-savings and improved control. In addition, the project increases transparency into spending as a whole, while reducing the development time to achieve delivery of new reports and special research results.

### Progress to Date

Award was made to vendor to provide requirements analysis, product specification and selection and infrastructure architecture for enterprise financial data warehouse. Gap analysis and reporting needs phases were completed in June 2007. Project is complete and in production as of March 2008. Work is currently underway to adjust SQL packages. Currently the Department of Finance is training County personnel from various agencies on the new DART system.

### Milestones

- *Requirements definition for agency reporting needs, April 2007*
- *Data model prototype, October 2007*
- *Selection of business intelligence platform solution, November 2007*
- *Develop a prototype, January 2008*
- *User acceptance and stress testing completed in January 2008.*
- *Project completion and roll out – March 2008.*

### Project Budget

FY 2008 funding of $450,000 provided for completing a full requirements analysis and feasibility study to assist in the selection of a Business Intelligence product and initial definition of a corresponding data

warehouse. Current reporting capabilities within the County are limited to voluminous reports generated from the County's mainframe systems. These reports are difficult to download and format. Significant time is required to re-key and verify financial data, which affects the timeliness and usefulness of information. No funding available in FY 2009.

### Return on Investment

Cost savings are realized through a reduction in staff hours, more timely and relevant data will enhance decision making throughout the County.

## IT0079 LEGACY SYSTEMS REPLACEMENT

### Project Description

Fairfax County government and school system have embarked on a multi-year, joint initiative to modernize the portfolio of enterprise systems that support finance (FAMIS), human resources (government: PRISM/schools: LAWSON), budget (BPREP), procurement (CASPS) and related administrative applications with an integrated approach that has the flexibility to meet current and future requirements. The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data.

The current 'stovepipe' legacy business systems are on various, old technology platforms using a variety of hardware and software architectures integrated through a number of interfaces and reporting tools. Previous assessments of these aging systems revealed that they are past their projected useful lifecycle, no longer meet today's technology standards, and do not meet the demands of resource and financial management and decision-making. System limitations continue to drive a proliferation of multi-step tasks to produce desired data and the development of numerous 'workaround' systems to gain necessary functionality currently not available. This has also resulted in an exponentially increased risk for fraud and security vulnerabilities. Due to their age, many of these systems have no vendor support and rely on retirement eligible in-house staff for maintenance. The systems are written in technical code that is outdated, they are not practiced by the vast majority of the industry labor pool and they are unable to be integrated with future mandated requirements.

Of these systems, the County government's Personnel Resource Information System Management (PRISM)

is the most vulnerable to immediate obsolescence issues. It is over 20 years old and highly customized based on historical County operational practices to the extent that it cannot be further enhanced. Further, attrition of in-house technical staff as they reach retirement age is jeopardizing future support for maintaining this legacy application - with the other systems approaching a similar expert support dilemma. Due to the impending lack of support, PRISM is the first of the legacy systems for PRISM, it is the first system we anticipate having to replace that system first with the financial sections implemented next.

### Project Goal

A governance body of senior officials of the County and school system stakeholder agencies has endeavored to identify the optimal strategy to pursue in its effort to procure an integrated financial/procurement/human resources/budget suite that will support agencies in the delivery of government and school services and activities, take advantage of best practices, provide the opportunity for multi-faceted data-driven decisions, significantly improve the efficiency and effectiveness of existing processes, enhance e-government initiatives and promote telework opportunities, and aid in the transformation and standardization of financial and human resource

processes. This initiative will foster an environment of change and redesign to allow for more efficient and effective processes.

Previous funding was provided to begin an assessment of the legacy systems used to support core business functions; identify, review and streamline existing business processes currently supported by the legacy systems; perform and analyze a review of existing and future trends in the software and systems implementer marketplace; and identify and refine functional business requirements necessary in the future software. FY 2009 funding is provided to continue the investment in this initiative, positioning the project to award the software and systems implementer contracts.

### Progress to Date

A joint project team comprised of County and School personnel has been formed. The Government Financial Officers Association (GFOA) is currently under contract to provide direction and resources in the identification of current processes, creation of requirements, and preparation and review of the procurement phase. The project team is engaged in researching other local jurisdictions and their integrated business solution projects.

### Project Budget

FY 2009 funding of $7,000,000 is provided to continue the investment in this initiative, positioning the project to award the software and systems implementer contracts.

### Return on Investment

The project seeks to mitigate the risk that antiquated and disjointed systems pose for system failure and inferior data. Automation and modernization will empower both employees and managers to execute processes more efficiently, and make the best strategic decisions based on the most timely and accurate information. This shifts the orientation of the system from that of a data repository to one of an information system solution. With the migration to a more standard, supportable database and development environment that incorporates workflow and Web technology, the project expects to:
Create a collaborative environment where access to data and information, even from remote locations, is based on system "look and feel" flexibility, intuition, data definition, data stewardship and security;

- Provide a seamless integration of a new system with existing applications;
- Reduce the number of shadow systems and reconciliations between systems;
- Align the reporting strategy with the County government and school system overall data management and data warehousing strategy. This must enable and support performance reporting and consistent information management throughout the organizations;
- Incorporate fully integrated best business practices;
- Develop a system that is user-friendly and that empowers users to improve their business processes;
- Add and improve functionality in back-office functional areas;
- Improve the quality and accessibility of information for decision support;
- Reduce redundant data entry, storage, and paper processing;
- Support the countywide balanced scorecard initiative;
- Improve operational effectiveness and productivity;
- Enhance web self-service and improve customer service; and
- Retire existing legacy and back office systems and tools.

# 3.5 TECHNOLOGY INFRASTRUCTURE

## IT0050 PUBLIC SERVICE COMMUNICATIONS REPLACEMENT

### Project Description

This project provides continuing funding for the new Public Service Communications System, which provides two-way radio communications for all County non-public safety agencies as well as the Fairfax County Public School Transportation Department (school buses), FASTRAN and the Fairfax County Water Authority, with updated technology that meets the needs of user agencies. The completed system provides adequate call processing capacity and area coverage to more than 90 percent of the area within the jurisdictional boundaries of Fairfax County. The 20-year old Public Service Communications System was based on a design that used two transmitter tower locations and twenty radio channels, with ten channels at each tower. The transmitter tower sites for the former system were located in Lorton, on the Energy/Resource Recovery Facility smokestack, and in Fairfax City, on the rooftop of the Massey building. The old system only provided geographical coverage for approximately 60 percent of the County and had limited call-processing capacity, frequently resulting in unavailability for users. In addition, the old system required users to manually select the correct radio channel based on their location within the County, requiring knowledge of the coverage each channel provided to the different parts of the County. There are large geographic areas where radio communications were not possible and many of these locations are heavily populated areas of the County. The old network did not meet the user needs for additional coverage nor provide for future growth or for advanced features, such as mobile data communications.

### Project Goals

The new radio system eliminates severe geographical coverage problem for County agencies, and provides reliable communications for the County fleet, back-up and interoperability supporting emergency management activities, and communications for an increasingly mobile workforce. The new system also provides a fully independent backup radio system for public safety agencies.

### Progress to Date

Prior year activities have consisted of the completion of a consultant study with recommendation for the replacement system, the development of requirement specifications, contract award, tower site acquisition, and FCC licensing requirement activities, construction, and activation of transmitting tower sites, and the migration of schools and county fleets to the new system. The entire network and the remaining migrations were completed in FY 2007.

### Milestones

- *Final Consultant's Report received, November 2001*
- *System Design begin, December 2001*
- *Contract Award and Execution, December, 2002*
- *Licensing and Tower Site Acquisition begin, January 2002*
- *Licensing and Tower Site Acquisition complete, 2005*
- *Site Preparation, 2005*
- *Network Equipment Installation, 2005*
- *Reliability and Functional Testing, 2006*
- *System Acceptance, 2006*
- *Procurement and installation of more than 3,600 new mobile and portable radios, 2006*
- *Old system retired, September 2005*
- *Full implementation and completion, June 2007*

**Project Budget**

The FY 2009 project cost is estimated to be $1,935,311 and includes the fifth-year of a seven-year annual lease-purchase payments for the new radio network infrastructure, including the increase of radio repeater locations from two to seven sites, to ensure greater than 90 percent call coverage, and for operating costs during the year. The new network eliminates the two zones within the County and provides for seamless coverage on one system regardless of location, as well as provides ample reserve capacity for peak use periods and future fleet expansion. Based on a

portion of project costs, derived from the number of radios users that will be operating on the system as a percent of the total number of radios; $1,272,088 will be recovered from Non-General Fund Supported agencies, the Fairfax County Public Schools and Fairfax County Water Authority in FY 2009, netting in a general fund cost to the county of $663,223.

### Return on Investment

The return on investment for this system upgrade results from the enhanced reliability and coverage that has been obtained. The replacement system provides reliable radio coverage to many areas of the County that were not covered by the older radio system. This provides the necessary protection and safety for bus drivers and other staffs that depend on reliable communications, improves customer service to County citizens and other County agencies, and reduces reliance on commercial wireless networks in addition to future cost avoidance and other non-quantifiable benefits. The new system is fully compatible with the mobile and portable radios used by the County's public safety radio system. This allows for direct communication between public safety and public service users for incident or disaster management, and provides a separate back-up system for the Public Safety system should that system fail. The County realized a cost avoidance of over $3 million by using the public service system to serve as the back up to the public safety system, rather than modifying the public safety system.

## IT0058 REMOTE ACCESS

### Project Description

This project continues funding to enhance and expand the capability of internal users to access the County's systems from remote locations, service field activities, and telework, and possible pandemic outbreak access. To accomplish this, the telecommunications infrastructure must be flexible in its modes of access, while maintaining a stable and secure communication environment. Because of the varied hardware and software capabilities of prospective telecommuters and the architecture of agency specific applications, the remote access solution uses a variety of technologies including dial-up modems, Secure Sockets Layer (SSL) Virtual Private Network (VPN) technology, and Citrix servers to meet the various access requirements of remote access and telecommuter users.

This project supports capability enhancement and expansion of Citrix using thin client technology. Since a number of project use Citrix to access county information, the telecommunications infrastructure must be flexible in its modes of access, while maintaining a stable and secure environment.

### Project Goals

An enterprise-wide standardized remote access control methodology provides a solution for employees and external system users, and also is intended to be expanded to partners and County customers and residents to authenticate their identity in order to gain access to relevant data and do business in a secure manner. All user authentication and authorization management is policy based and centrally managed allowing for comprehensive audit and reporting services to support and log information on the extensive user base. This product increases security, simplifies management, speeds reporting and data analysis, and provides secure access from remote locations.

### Progress to Date

Required software licenses have been obtained. Business units to participate in the first phase of the rollout have been identified. Expanded Citrix farm to prepare county for continuity of operations in case of catastrophic events such as pandemic flu, weather related disasters, etc.

### Milestones

- *Purchase the required software licenses to ensure compliance with license agreements, July 2004*
- *Identify business units to participate in the first phase of the rollout, July 2004*
- *Install and test hardware and software, August 2004*
- *Full production services to all selected users, November 2004*
- *Citrix farm expanded, FY 2007*
- *Additional licenses purchased, FY 2007*
- *Additional applications added to farm, FY2007*
- *New improved farm with latest technology implemented, FY2008*

### Project Budget

In FY 2007, funding of $100,000 was provided to continue the build out of the telework environment and to increase the number of applications that can be accessed remotely. Additional Citrix licenses, Microsoft licenses and consultant services were required in addition to Security Token Cards and application software licenses. No funding available for FY 2009.

### Return on Investment

This project provides a cost effective approach to enhance the County's infrastructure to offer flexibility for a variety of types of end-user devices that may be used by County staff, and to encourage more employees to take advantage of telecommuting in line with regional goals supported by the Board of Supervisors.

## IT0060 TELECOMMUNICATIONS MODERNIZATION

### Project Description

Voice communications is a critical tool used by all Fairfax County Government agencies. Whether it is citizen access via e-government, efficient management of government information, the advancement of education, the safety of our children on school buses, or homeland security, voice communications plays a critical role. The County's current infrastructure has served the County well, but is in need of replacement. Additionally, the current infrastructure does not serve all County locations nor does it support a number of key goals identified by the County as meeting the needs of citizens and employees. As a result, the County is embarking on an ambitious plan to completely modernize and revitalize its voice technology infrastructure.

In May 2006, Fairfax County selected Avaya Inc. to provide a new voice communications platform for the County. Avaya Inc. designs, builds, and manages communications networks for more than 1 million businesses worldwide, including over 90 percent of the FORTUNE 500®. Focused on businesses large to small, Avaya is a world leader in secure and reliable Internet Protocol (IP) telephone systems and communications software applications and services. Avaya currently serves numerous local, state and federal government clients across the country, including the District of Columbia, Loudoun County, and Montgomery County local governments within the metropolitan area.

The Avaya solution will provide many new applications that will benefit both County employees and citizens alike.

### Project Goals

The strategic goals of this project is to move the County towards a long-term, flexible voice solution that will underwrite the use of Voice over Internet Protocol (VoIP) while maintaining complete TDM (current technology), functionality. An IP enabled enterprise-class platform will provide the County with the ability to adopt newer value added features from the maturing IP telephony environment. Any new architecture must yield a flexible yet stable infrastructure that can meet immediate telephony needs and support future enhancements. This new platform will be the foundation for eventual movement to a converged network environment. Over the life-cycle of this transformational project, change will be introduced in more manageable increments than would be possible in a massive change out of technology, applications and processes. The following six strategic goals for Fairfax County voice services were developed and reviewed with senior County technology managers:

**Goal 1:** Optimize the total life cycle cost for voice services.

**Goal 2:** Provide common voice architecture, Countywide.

**Goal 3:** Provide secure remote access for voice and data to expand Telework

**Goal 4:** Provide compatibility with "best-in-class" citizen access technologies.

**Goal 5:** Develop a survivable architecture that is scalable and flexible.

**Goal 6:** Prepare for the convergence of voice and data onto one logical network.

### Milestones

- *RFP issued, September 2005*
- *Highest rated offeror selected, December 2005*
- *Contract negotiations completed, March 2006*
- *Contract executed, May 2006*

- *Installation at Immediate Relief/Proof of Concept sites begins, September 2006*
- *Installation of Massey Core Switch completed, September 2006*
- *Installation of Immediate Relief/Proof of Concept sites completed, February 2007*
- *Installation at Lab Switch completed, March 2007*
- *Installation of Government Center Core Switch completed, May 2007*
- *Phase 1 Implementation completed, November 2007*
- *Implementation of Emergency Survivable Server Network, February 2008*
- *Phase 2 Implementation completes, June 2008*
- *Phase 3 Implementation completes, June 2009*
- *Phase 4 Implementation completes, June 2010*

### Progress to Date

Following the contract award in May 2006, Fairfax County and Avaya, Inc. launched an aggressive "Immediate Relief/Proof of Concept" implementation at 7 sites. These sites were chosen to eliminate the escalating degradation of service in some of the County's oldest equipment. To date the following agency/locations have been migrated completely to the Avaya platform:

- Community Services Board – North West Center
- Chantilly Regional Library
- Community Services Board – Lincolnia Center
- Alcohol and Drug Services – Crossroads
- DIT Radio Shop
- Community Services Board – Springfield Mental Health
- Alcohol and Drug Services Administration
- Housing and Community Development Headquarters
- Opportunities Alternatives and Resources – City Square
- Facilities Management Department – Burke Station Rd. (6 Buildings)
- Volunteer Fairfax
- Finance Building – Annex
- Juvenile Detention Center
- Juvenile and Domestic Relations Court
- Police Annex
- Massey Building – Police / Fire and Rescue HQ
- Legal Aid – Finance Annex
- Jennings Judicial Center
- Burkeholder - Center
- Burkeholder - Annex
- Office of Sheriff – Jennings Building
- Office of Sheriff – Administration
- Office of Sheriff – Juvenile Court
- Office of Sheriff – 3rd Floor Massey
- Adult Detention Center

Goals for Remainder of FY 2008:

- Department of Information Technology – Government Center
- Storm Water Maintenance
- Department of Tax Administration – Government Center
- Joseph Willard Health Center
- Community Services Board – New Beginnings

FY 2009 Goals:

- Government Center Building
- Pennino Building
- Herrity Building
- 18 Libraries
- Police Academy
- Police CIB
- Family Services – Seven Corners
- North County
- CSB – Woodburn
- Bailey's Health
- Mount Vernon Mental Health
- 9 Board of Supervisors' Offices

The replacement of the current voice communications infrastructure is anticipated to be a four year project that when completed will touch approximately 15,000 Fairfax County employees. The installations will occur in phases which will allow multiple opportunities and avenues to prepare the Fairfax County Government community for the transition, and thereby ensure a smooth change of voice platforms. Successful implementation will require accurate and consistent communications regarding project status, system features and functionality, dialing plan information, and changes that users (both employees and citizens) can expect.

### Project Budget

Additional funding of $1,534,750 is provided in FY 2009 to continue the technology upgrade and implementation. Final incremental funding is planned for FY 2010.

### Return on Investment

The benefits derived from the implementation of this project are quantifiable and substantial. Direct cost savings include: a reduction in leased circuit costs; a reduction in message unit costs for outside phone calls; and a reduction in overall maintenance costs, including moving phones, adding new phone lines and changes to existing phone service. In addition, the new voice infrastructure will allow Fairfax County to leverage embedded technology assets and to improve service delivery quality. Business processes will be streamlined because of the ability to share information over an integrated communications Platform.

## IT0061 IT SECURITY

### Project Description

This project supports the County security architecture, designed to provide an appropriate level of protection for all County information-processing resources regardless of technology platform. Aimed at ensuring that county systems and information and the confidentiality of legally mandated information are not compromised, new technologies need to be employed to meet current and future security challenges. The Fairfax County Information Technology Security Policy, the mandated specifications of the Commonwealth of Virginia Information Technology Security Policy and Standards, and the Health Insurance Portability and Accountability Act (HIPAA) Security Rule, along with other mandated privacy laws and County internal audit priorities, are examples of governing legal precedence and policy that dictate a requirement for audit controls to record and examine activity in information systems. Such audit controls will protect the integrity and sensitivity control on the information contained within the County's technology infrastructure. This project will provide security analysts and managers with advanced tools to proactively build and measure comprehensive security best practices within agencies and across the County.

Additionally this project will afford Fairfax County to manage connectivity to its infrastructure through controlled network connections that will interrogate unknown devices for verification of anti-virus, patch management, and licensing standards. Devices found not to be in compliance will quarantined/or refused access until they can be placed in compliance.

### Project Goals

Through this project IT will continue enhancements to the County's modular network infrastructure that will allow for incorporation of necessary levels of security to be embedded in specific functional areas. In order to manage the modular infrastructure and the additional firewalls, intrusion detection systems and networking devices a Network Access Control (NAC) solution will be deployed to identify non-standard and non-secure systems that are a threat to the security of the infrastructure and County data. This ability is required and will be implemented in appropriate areas of the system. Additionally, the on-site support of highly skilled network engineers must be deployed in order to roll out a simplified security design and create a manageable security architecture that allows for security devices to function optimally and provide identification of specific threats. A standardized and centralized secure authentication and authorization methodology for web-based applications will be implemented.

The Distribution Node Intrusion Prevention System (IPS) solution will provide the proactive ability to block and detect malicious traffic before it spreads across the county's Wide Area Network. Combined, these

efforts will lower the risk that the availability, integrity, and confidentiality of county information technology assets will be compromised. These projects will continue enhancements to the County's modular network infrastructure that will allow for incorporation of necessary levels of security to be embedded in specific functional areas.

An enterprise-wide standardized access control methodology will provide a solution for employees and internal system users, and also is intended to be expanded to partners and County customers and residents to authenticate their identity in order to gain access to relevant data and do business in a secure manner. User authentication and authorization management is policy based and centrally managed and allows for comprehensive a countywide security monitoring and audit control process including audit and reporting services.

The Fairfax County Information Technology Security Policy, the mandated specifications of the Commonwealth of Virginia Information Technology Security Policy and Standards and the HIPAA Security Rule, along with other mandated privacy laws and County internal Audit priorities, are examples of governing legal precedence and policy that dictate a requirement for audit controls to record and examine activity in information systems.

### Progress to Date

Work associated with planning, design, and initial proof of concept in a development environment has started for the NAC project; and planning and design is complete for the IPS project. The required technology tools will be implemented in phases based on infrastructure engineering needs, business function priorities, and legal mandates aligned with county e-business projects.

### Project Budget

FY 2009 funding of $300,752 is recommended to support the County security architecture, designed to provide an appropriate level of protection for all County information-processing resources regardless of technology platform.

### Return on Investment

This project will ensure system compliance with security policies, provide for centralized real-time auditing, provide a solution for managing users and their Web application access, ensure timely access to business assets through an authenticated identify, and provide for an immediate response to technology threats. The information security and internal audit offices will have the capability to perform security management audits and analysis centrally across platforms and verify progress in security management protection via software reporting capability. The implementation of the IPS at the Distribution Nodes will help mitigate the risk of malware propagation that results in a Denial of Service (DOS) condition. In addition, botnet traffic could also be detected and blocked.

These projects will significantly decrease the staff time required for manual auditing and IT security investigations. Both projects will also grant the ability to provide enterprise-monitoring capabilities as a safeguard to improve reliability and reduce downtime. Non-standard and non-secure systems will be identified as a threat to the security of the infrastructure and County data. The solutions address multiple regulations with minimum resources by implementing and measuring compliance through automated analysis.

## 3.6 HUMAN SERVICES

### IT0002.6 ATHLETIC FACILITIES SCHEDULING SYSTEM (AFSS)

The Department of Community and Recreation Services (CRS) schedules community use of public athletic facilities (fields and gymnasiums), including both County and Fairfax County Public Schools (FCPS) sites. Scheduled athletic community use takes place during weekday evenings and on weekends. CRS currently uses the Athletic Facility Scheduling System (AFSS) to input facility requests, schedule events, issue permits and produce facility schedules in accordance with facility use policies while FCPS uses a separate product (FSDirect) as a facility management tool to input schedules.

The Athletic Facilities Application Request (AFAR) module allows the designated sports organization representatives to: submit Community Use applications via the Internet; receive notification of application processing status; view/print their organization's permit on line; submit team rosters and practice and game schedules; make payments online (Credit Card acceptance). Guest users (general public) will have the ability to submit applications online. This project automated a tedious and cumbersome paper process and reduced the number of forms that needed to be completed and submitted each season. In addition, by accepting online payments, this phase of AFSS enhanced revenue collection procedures.

#### Project Goals

The goal of the project is to maximize technology to reduce the burden on both applicants (Fairfax County residents and others) and staff when requesting community use of a public athletic facility. The entire workflow process for scheduling community use of public athletic facilities will be streamlined. Redundant keying of information will be eliminated. Currently staffs receive hard copy application information and have to both review it to identify any changes and key the changes into the AFSS system. Phase II of this project will pull up the requests, verify that the information is consistent with data standards, and approve the automated transfer of the submitted data to the AFSS Request Module.

#### Progress to Date

Phase III of this project, the Athletic Scheduling Interface System (ASIS) module is scheduled for full implementation in the winter of 2008. To increase efficiencies, the possibility of both CRS and FCPS migrating to the same system was explored. It was determined that the requirements of the two organizations and two systems were significantly different and therefore, it would not be possible to meet all needs within a single system. However, an interface between the two systems is a viable option that would enable the County and FCPS to share specialized common data between the two systems. In addition, it will increase scheduling efficiencies, eliminate data entry duplication, reduce scheduling conflicts, and enhance the quality of the athletic facility use experience for the residents of Fairfax County.

#### Milestones

- *Detailed requirements analysis, July 2004*
- *Logical and physical design, October 2004*
- *Development of the software for on-line application processing, October 2004*
- *Development of the software for roster submission, October 2004*
- *Testing of the software for on-line application processing, May 2006*
- *Testing of the software for roster submission, May 2006*
- *Development of the software for payment acceptance May 2006*
- *Testing of the software for payment acceptance, July 2006*
- *Development of the software for customer identification and authentication November 2006*
- *Testing of the software for customer identification and authentication December 2006*
- *Acceptance Testing of combined modules and their integration with AFSS,April 2007*
- *Training of staff on Phase II modules, September 2007*
- *Sign-off for the on-line application processing, roster submission system, delivery of code, December 2007*

- *Commence with interface project, September 2007*
- *Sign-off for the interface project, December 2008*

### Project Budget

Funding of $102,000 for additional contractor services was provided in FY 2005 to complete on-line registration requirements. Additional funding was acquired in 2006 to complete the payment acceptance and customer identification and authentication modules. FY 2008 funding of $150,000 was provided to allow CRS and FCPS to partner on the interface initiative. No additional funding is requested for FY 2009.

### Return on Investment

Revenues will be enhanced by offering the public the capability to accept online rosters and payments. Response from the athletic community indicates tremendous acceptance of and satisfaction with AFSS and the permits that they receive. The customer using online application processing will benefit from a faster turn-around time to provide space allocation information, as well as increased communication with staff regarding the status of their application. In addition, many applications currently submitted are poorly handwritten and incomplete. This results in inaccurate data due to misinterpretation of handwriting, or returning the application package to the customer for completion. The consequences often are late submissions and very dissatisfied customers.

## IT0002.7 HOMELESS INFORMATION SYSTEM

### Project Description

This project provided funding to several County Human Services agencies for implementing an information system to track and monitor the homeless population served by the County and the local Continuum of Care (CoC). The FY 2001 appropriation bill for the Federal Department of Housing and Urban Development (HUD) requires that all local jurisdictions' programs receiving HUD grant funds develop a database to store specific data on homeless persons receiving services. This new mandate requires these programs to track and report patterns of use of assistance funded under the McKinney-Vento Act, to provide HUD (at least annually) unduplicated counts of homeless individuals using assistance programs, and to provide data that analyzes the use and effectiveness of those programs. These data is used by HUD to prepare the Annual Homeless Assessment Report to Congress, and for client-level reporting on client characteristics and outcomes through the Annual Progress Report. Local jurisdictions were required to begin reporting these data to HUD beginning October 2003.

### Project Goals

Fairfax County is supported by several active community-based organizations that partner with County Human Services agencies to provide support to the homeless population. This network of organizations works together through committees, partnerships, and other special interest councils. This project allows the County to comply with the mandates prescribed by HUD and further enhance these relationships through facilitating sharing of data, and providing a single reporting mechanism to HUD.

### Progress to Date

Contract was awarded in FY 2003 and the project began in August 2003. In January 2004, four pilot CoC organizations were trained and began using the new system for live data processing. Two other phases followed, with each provider being trained and added to the live system one at a time, a total of 12 additional providers. All HUD grantees have been trained and are entering and reporting data on services for the homeless. In January, 2007, the last of three custom reports was completed and delivered by the contractor. In June 2007, the project was complete and entered maintenance and support.

### Milestones

- *4 Pilot organizations began using the system, January 2004*
- *6 additional organizations began using the system, October 2004*
- *3 additional organizations began using the system, November 2005- April 2006*
- *3 remaining HUD grantees trained, October 2006 - January 2007*
- *Project roll out complete; maintenance and support phase begins, June 2007.*

### Project Budget

Funding in the amount of $185,500 was allocated in FY 2003 for the purchase of the hardware, software COTS package, and contractor services for implementation. In house staff was used to prepare requirements, evaluate COTS packages, implement the system, and provide user support. No additional funds required.

### Return on Investment

This project allows the County and the local CoC to comply with the October 2003 mandated deadline, and allows County homeless programs to retain current levels of grant funding. The potential for expansion of grant funding is enhanced due to improved program reporting and administration. In addition to meeting the federal mandate, participating CoC organizations will benefit from on-going tracking and monitoring of the homeless population through increased coordination and information flow among programs to improve service delivery, more efficient tracking of service delivery and measuring program effectiveness, improved information to identify service gaps, and to inform program design and policy decisions. Improved program data and coordination translates into more effective use of federal, state, local, and private funds to support the homeless population in Fairfax County.

## IT0011.9 DOCUMENT MANAGEMENT & IMAGING - DFS

### Project Description

This project will support the transition within the Department of Family Services (DFS) from manual process to file, store and access records using document management and imaging technology. This project will use the enterprise electronic records management platform technology to achieve its goals, with business-specific components planned for Family Self-Sufficiency and Children, Youth, and Families programs.

### Project Goals

Goals of the project are: a) to provide a reliable and secure system for cataloging, archival and retrieval of sensitive Human Services documents in fulfilling case management needs of County residents, and, b) improve response times for client inquiries of case records. In addition, the project will allow for the management and preservation of DFS records in accordance with State and Federal mandates, and avoid non-compliance issues associated with the degradation, damage, or loss of paper files.

### Progress to Date

This is a multi-year and multi-phased project. As with similar initiatives, the phases will be delivered in smaller, modular components as each component and the necessary infrastructure is ready. By implementing smaller parts instead of the entire phase at a time, disruption to business operations is minimized. In FY 2005 and FY 2006, Infrastructure components were developed to support the delivery of the initial component for Family Self Sufficiency began requirements definition. FSS functional requirements and a prototype design were completed in FY 2007. Also in FY 2007, requirements definition began for Children, Youth, and Families, for the integration of the Commonwealth's SPIDeR system, and for the replacement of a data feed to a key financial systems. In FY 2008 system design and initial development/configuration tasks were completed for FSS.

### Milestones

- *Design, develop, and test Family Self Sufficiency module: FY 2007 - 2009*
- *Deliver scanning capability to support FSS: FY 2008 - 2009*
- *Design, develop, and test Children, Youth, and Family Module: FY 2008*
- *Scanning upgrade to support CYF: FY 2009*
- *System Integrations with SPIDeR, FAMIS: FY 2008-FY 2009*

### Project Budget

In FY 2005, funding of $1,179,567 was provided to automate the DFS record/document management processes. No additional funding was provided in FY 2006 and FY 2007. Additional funding is anticipated to support future phases to enable the use of document management technology within the Department of Family Services (DFS). No funding was requested for FY 2009.

### Return on Investment

Cost savings will be realized as a result of improved processing of paper documents, improved use of staff time, and improved error rates related to more effective, efficient document management. These funded initiatives of the imaging and workflow project are expected to increase the security of records, protecting them from unauthorized access; promote telework; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

## IT0011.10 DOCUMENT MANAGEMENT & IMAGING – OFC

### Project Description

This project will provide for the second phase of the Office for Children's (OFC) Electronic Records Management system. In FY 2007, the project transitioned Community Education and Provider Services, and the Child Care Assistance and Referral program to document imaging technology. The second phase of this project will include the Head Start and School Age Child Care program. Head Start maintains files for over 500 children and families in multiple locations that with this technology could more efficiently be reviewed electronically by field staff and auditors; and the School-Age Child Care Program provides direct services to over 14,000 children in 134 centers. This transition to an electronic system will ensure that citizens receive the most efficient, highest quality of service across OFC program divisions, and that all legal mandates are satisfied regarding record archival and citizen and client privacy.

### Project Goals

This project provides for a structured enterprise approach to the development of imaging and workflow capabilities in agencies that have identified an opportunity to: provide increased security and integrity of their records; reduce the labor intensive record retrieval and re-filing process; expedite workflow processes through an electronic workflow management system; provide simultaneous and instant access to records; and reduce costs associated with space and shelving for storage of paper requirements.

### Progress to Date

Community Education and Providers Services, Child Care Assistance and Referral program and SACC Registration are currently in production with this technology. Head Start and SACC licensing are scheduled to start requirements analysis in early FY 2009. SACC programming and the Directors Office is planned for Phase 3.

### Milestones

- *Deployment of SACC Registration Module, In Production*
- *Complete Requirements for Head Start and SACC Licensing Modules*
- *Design, development, and testing of HS and SACC Licensing Modules*
- *Training/deployment for HS and SACC Licensing Modules*
- *Phase 3 planning*

### Project Budget

No additional funding is provided in FY 2009. Additional funding is anticipated for the third phase of the Office for Children's (OFC) electronic records management system.

#### Return on Investment

These funded initiatives of the imaging and workflow project are expected to increase the security of records, protecting them from unauthorized access; reduce staff time required to retrieve and re-file documents; reduce processing time as many of the workflow efforts will streamline the reviews required; provide a viable, accurate document system for old and one-of-a-kind documents; promote telework; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

## IT0015 HEALTH DEPARTMENT MANAGEMENT INFORMATION SYSTEM

### Project Description

This project supports the information management needs of the Health Department. Recently the fifteen-year old Fairfax County Health Department's Health Management Information System (HMIS) was replaced with a newer system (AVATAR), and required interfaces to link it to other health systems so as to provide a comprehensive set of services to the public was completed. The Health Department currently uses the AVATAR Patient Management System as the central database for collecting and maintaining patient information.

### Project Goals

The backup location will allow for continued operations in the event of a disaster or an emergency. In addition, the operating system, database, and application software will be upgraded to current specifications, and security technology will be enhanced to ensure continued data protection.

### Progress to Date

The project was divided into four phases. Phase I represent core functionality for patient care and financial services and was implemented in May 2005. The second phase, implemented in December 2006, expanded patient care services by implementing three additional health care clinics serving uninsured and underinsured residents. The third phase will provide electronic billing capabilities and is expected to be completed by June 2008.

### Milestones

- *Electronic Billing Complete – June 2008*
- *Software Upgrade Complete – July 2008*

### Project Budget

In FY 2008, funding of $280,785 provides for a backup location for the AVATAR system's hardware and software. Funding will be used to procure additional hardware, such as servers, for the application. No funding provided in FY 2009.

### Return on Investment

The availability of the AVATAR system will be critical in the case of a natural or man-made emergency event that would compromise County network technology. If a catastrophic event were to occur, a backup facility will help to ensure that the Health Department's central systems remain operational and that confidential patient information is secured.

## IT0054 SYNAPS EXPANSION

### Project Description

SYNAPS was developed for the Fairfax-Falls Church Community Services Board (CSB) to improve client tracking and client and third-party billing, enhance client demographic and staff productivity data, and provide for the opportunity to comply with the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

### Project Goals

The enhanced system will be upgraded to current technology specifications and reflect improved security technology to ensure continued data protection.

### Progress to Date

Efforts in FY 2008 and FY 2009 include collaboration with the vendor to bring the database and supporting Application Servers into current technology. Consulting will be employed for Infrastructure analysis and fine-tuning. Roll-out of new hardware has been base lined as an incremental just-in-time rollout so that Hardware and licensing come on-line as CSB staff are trained and join usage of the system

### Project Budget

FY 2008 funding of $500,000 provides for the replacement and scaling-out of application servers and introduction of a more reliable environment to meet expected growth and increased utilization as the single Electronic Health Record for the CSB, with a maximum user population of 800 users. No additional funds required for FY 2009.

### Return on Investment

The enhanced system will provide greater system reliability and end user satisfaction upon implementation. The final phase will also produce a more reliable and less labor-intensive application.

## IT0059 CHILD CARE TECHNOLOGY

### Project Description

The Child Care Management system determines client eligibility, tracks child enrollments, and processes approximately $3 million per month in provider payments for the Child Care Assistance Program. This application processes over 2,500 home child care facility permits for Provider Services and connects families with child care providers participating in the Child Care Resource and Referral System. The application tracks current market rates for providers and interfaces with **FAMIS**. This Child Care Management System is under a maintenance contract with Saber.

The current Child Care Management System software runs Oracle Forms 6 and Oracle 9i database server on a Windows 2000 platform. Oracle no longer provides support for Forms 6, and no longer provides support for 9i on a Windows 2000 platform. This project will upgrade the software for the Child Care Management system to Windows 2003 and Oracle 10g. The cost of this project includes Saber performing the installation of Windows 2003 and Oracle 10g. Oracle forms will be replaced with a .NET framework. This upgrade must be performed by Saber under the terms of the maintenance agreement.

### Project Goals

This project will allow OFC technoloy to be in compliance with DIT requirements. It will address security concerns with Oracle 9i. Oracle 10g will provide a more secure database. A .NET framework with provide a full WebCCMS suite. Providers and centers will have access to their data via the web and the ablility to maintain their profiles, which reduces the need for OFC staff to maintain data. OFC depends on this database to issue permits and support the Child Care Assistance and Referral program, which includes the online search for child care on the public web. The goal of this project is to provide up-to-date, secure technoloy and offer e-government services to family day care providers and centers.

### Progress to Date

This project was initiated in FY 2008, and the contract was amended in May 2008.

### Milestones

| | |
|---|---|
| • *Contract amendment* | *May 2008* |
| • *Requirements Analysis* | *May 2008* |
| • *Sign-off on Approach Document* | *July 2008* |
| • *Completion of Test and Production environments* | *December 2008* |
| • *Completion of System Test* | *February 2009* |
| • *Completion of UAT* | *March 2009* |
| • *Training* | *April 2009* |
| • *Rollout* | *April 2009* |

### Project Budget

The FY 2008 partical funding of $194,165 for this project was provided from the county's IT budget. The remaining funding of $341,646 is provided by the agency. The total cost of $535,811 will cover all necessary software, hardware and consultant services to fully implement this project.

### Return on Investment

This project will ensure the Child Care Management is operating on supported technoloy.
E-government services will give providers and centers the ability to access data and maintain their profiles, reducing the need for OFC staff to maintain data. This system is used to support the Office for Children's business in permitting family care providers and the Child Care Assistance and Referral program. Without this system the County could not issue permits to family day care providers or process over 3 million dallors per month in payments to providers and centers. Upgrading this system would avoid any future cost assosicated with a non supported system. E-government services support the county's IT strategic plan.

## IT0069 INTEGRATED HOUSING MANAGEMENT SYSTEM

### Project Description

Housing and Community Development (HCD) will deploy a new comprehensive housing management system, a result of a redesign effort consolidating 17 programs, six computer systems, six separate databases, and a host of manual processes. This effort will streamline requirements for HCD's compliance with U.S. Housing and Urban Development's (HUD) reporting structure, incorporate all HCD partnership program financial information on one technology platform, and enable for project-based reporting requirements for all Public Housing Authorities. Much of the data for the new system can be automatically extracted from the existing County financial and procurement system, eliminating manually entering data which can result in the reporting of inaccurate data or the omission of pertinent financial data.

### Project Goals

Overall project goal is to automatically extract information from the existing corporate enterprise systems, eliminating the current manual process of entering data which often results in the reporting of inaccurate data or the omission of pertinent financial data.

### Progress to Date

Initial business review and Statement of Work for two phases has been completed. Phase I which commenced in March 2007 automates postings transactions originating in Yardi to FAMIS. The initial HUD mandated modifications were completed July 2007, remaining modifications will continue thru December 2008. Currently phase I performs interface postings of four to six thousand transactions from Yardi to FAMIS with little human intervention including automated reconciliation and reporting. Phase II will automate postings transactions originating in FAMIS to Yardi as well as additional FAMIS to Yardi alignment functions.

### Milestones

- *Signed Statement of Work, January 2007*
- *Requirements' Analysis, March 2007*
- *First integration Completed – July 2007*
- *Requirements Analysis Phase II, September 2007*
- *Second Integration Code commence November 2007*
- *Testing Second Integration, February 2008*
- *Second Integration Complete, April 2008; estimated completion of Phase II – July 2008*
- *Commence Phase III in July 2009*

### Project Budget

FY 2006 funding of $160,000 was provided to develop an interface between the financial module of the HCD management system and the County's financial and procurement systems. Additional funding of $222,500 was provided in FY07 to complete the interface and ensure compliance with HUD mandates. No additional funds were requested for FY 2009.

### Return on Investment

The principal return on investment for this project involves savings related to staff time and improved customer service. The implementation of this system will reduce compensatory pay and overtime for staff involved in the time consuming dual-entry of financial information. Clients will receive better customer service when inquiring about payments made or Housing Assistance payments they expect to receive, landlords and housing assistance clients will be able to access this information through the Web, and payments can be processed as needed, rather than

the current weekly batch processing. Landlords who receive rental payments and clients who receive utility assistance will receive their payments in a timely manner. This project provides Housing Management staff remote access to up-to-date information which improves customer service. Furthermore, capital project expenditures will be monitored more closely by project managers, potentially decreasing the risk of overages. Each housing project and program's financial situation is monitored individually, allowing Housing Management to make more informed decisions regarding performances.

## IT0073 INTEGRATED PARCEL LIFE CYCLE SYTEM (UDIS)

### Project Description

The purpose of the project is to replace the obsolete Urban Development Information System (UDIS) and create a cross-functional data repository to better harness the value of the land parcel information the County maintains and to make that information more accessible across County agencies. This information includes population and housing unit estimates and forecasts which are used by the County to help determine services and service provision levels, plan capital improvements, respond to state and federal reporting requirements, and respond to regional initiatives such as transportation planning, air quality modeling, and other programs of regional significance.

### Project Goals

UDIS was used to process information from a number of non-integrated mainframe database sources and produced housing estimates and forecasts, population estimates and forecasts, market value estimates for owned housing, non-residential gross floor area estimates and current and planned land use summaries summarized by hard-coded geographic areas. Design of the new IPLS will take advantage of spatial Oracle processing using land parcels as building blocks. This approach will better integrate data across multiple County agencies and systems, and will provide for increased functionality for using these data more efficiently including a more granular analysis of parcel data.

The existing UDIS, an amalgamation of interfaces and reports, had forced County staff to maintain and write software patches for programs that no longer work, to reverse migrate data from Oracle databases back into obsolete mainframe formats, and to supplement missing information through manual intervention. It has exceeded its useful life and is very labor and time intensive to maintain. The new system will have a modern process that captures data regardless of system or format, and will use the County's GIS system as a data foundation.

### Progress to Date

- Preliminary analysis, design, and database foundation structure completed July 2006
- Detailed requirements analysis, design, and coding completed May 2007
- Testing and implementation of phase 1 of the application completed July 2007
- Preliminary report development completed September 2007
- Remaining funds will be used toward an enterprise solution for data analysis and reporting for County agencies and citizens.

### Project Budget

FY 2007 funding of $820,000 will complete the development of the system and automate report generation. Approximately $100,000 of this funding has been allocated to PAT in DIT to find an enterprise solution that will complete the report generation requirement. No additional funds requested in FY 2009.

### Return on Investment

This updated system satisfies an ongoing requirement to analyze and provide demographic analysis to the Council of Governments and County agencies. The primary customer for this application is the Research, Analysis, and Project Services branch of the Department of Systems Management for Human Services. The Demographers in this branch have the responsibility of preparing detailed population forecasts for submission to the Council of Governments and the federal government. The current UDIS system is unable to function because the mainframe databases it uses have been replaced with new systems. A more user-friendly and accessible application would also be utilized by other agencies that require demographic analyses and projections, including the Department of Planning and Zoning, the Department of Public Works and Environmental Services, the Department of Transportation, the Economic Development Authority, the Fairfax County Public Schools, Fire Department and the Police Department.

## IT0075 PARTICIPANT REGISTRATION SYSTEM

### Project Description

This project will allow the Department of Community and Recreation Services (CRS) to implement a centralized, web-based participant registration and tracking system at all community centers, senior centers, and teen centers. The current manual and outdated method of registering and tracking participants leads to inconsistent data reporting, participant confusion and complaints, and programmatic disruption. Implementation of a centralized system will significantly address these issues.

Under the planned system, participants will be issued identification cards with bar codes that they will scan upon entrance to any CRS center. This will enable staff to verify program/center eligibility and track participant attendance at both the center and the individual activities offered at the facility. The system will also interface with existing financial systems in order to manage program and related fees. CRS will be able to use the data recorded in the system to meet state and local reporting requirements, and to assist in program development and strategic planning. The system will also ensure the security and confidentiality of participant information.

### Project Goals

Project goals aim to implement standardized data collection on participants for all centers, ease the registration process for participants who use CRS centers more than once or at more than one location, provide the ability to sort multiple data fields and develop reports for use in program development, strategic planning and improved customer service for citizens using CRS centers. In addition, the enhanced system will provide an interface with existing county financial systems.

### Progress to Date

CRS is in the process of finalizing the business and system requirements for this project. It is anticipated that an RFP will be issued in the spring of 2008 and contract award is anticipated for the late summer of 2008.

### Milestones

- *Finalize requirements analysis, December 2007*
- *Issue Request for Proposals (RFP), April 2008*
- *Review proposals, June 2008*
- *Sign contract, August 2008*
- *Vendor designs/customizes application, September 2008 – January 2009*
- *County purchases necessary hardware (servers, photo/scanning equipment), December 2008 – January 2009*
- *Convert existing data into new system, January 2009 – February 2009*
- *User acceptance testing, March 2009*
- *User training, April 2009*
- *Pilot system at a limited number of centers, May 2009*
- *Full application deployment, June 2009*

### Project Budget

FY 2007 funding of $300,000 was provided. No additional funding is requested for FY 2009.

### Return on Investment

This effort will improve customer service and efficiency, ensure accurate data reporting, and improve data security. This project will significantly reduce the burdensome paper registration process that currently exists for the public. Participants will no longer have to wait in lines to sign paper attendance sheets. The centralized information will provide for better and more accurate data reporting and will ensure that confidential participant data is protected. Additionally, a reduction in the staff time required to process registrations and compile data for reporting purposes is expected.

## IT0076 INTERACTIVE WEB INTAKE PROGRAM ENHANCEMENTS

### Project Description

This project provides support for the Interactive Web Intake program at the Department of Housing and Community Development (HCD). In March 2004, the HCD launched a new Web application giving clients access to services on a 24/7 basis. Currently, HCD collects only enough information through the Web to place its applicants on appropriate waiting lists. There is no capability for applicants to update information, so the process reverts back to filling out dozens of forms and requires time consuming data entry. Furthermore, participants must complete paper-based, annual re-certification packets, including income verification authorizations.

### Progress to Date

Fixed cost work has been completed and vendor has demonstrated application to agency. Go-live date is scheduled for June 2008. Training, revisions, and Intake analysis and is projected to be complete by July 2008.

### Milestones

- Contract award, April 2007
- Requirements document completed, July 2007
- Initial coding to commence, September 2007
- Application presentation to agency January 2008.
- Final design work and data sent to vendor, January, 2008.

### Project Budget

FY 2007 funding of $130,000 provided to enhance the interactive Web application, including the opportunity to apply online in multiple languages. No funding request was made for FY 2009.

### Return on Investment

By engaging the applicants in data entry, cost savings will be realized through reduced call support reduced front counter engagements, reduced copying costs, and reduced paper storage and archiving. HCD anticipates that the savings will reduce staffing needs by one full-time SYE in its application center. In addition, the web intake program will allow HCD to streamline its waiting lists and be able to offer rental properties to applicants that are more suited for the available units. The reduced turnaround time will minimize the time that rental units are vacant, increase overall revenue, and enable property managers to maximize resources.

## IT0011.15 HOUSING MANAGEMENT DOCUMENT IMAGING / ARCHIVING

### Project Description

This project allows Housing & Community Development (HCD) to join the structured enterprise approach being implemented across the county for the development of imaging and workflow capabilities. HCD serves over 10,000 clients each year, owns or manages nearly 3,600 housing units, financially assists an additional 3,100 properties currently in its portfolio as well as thousands in the past, and manages $155 million of operating and capital programs annually. Due to the complex work of HCD, the number of entities it must report to (including the Fairfax County Redevelopment and Housing Authority, nonprofits, federal entities, etc.), and the resulting number of reporting requirements and timelines HCD must comply with, the volume of paper copies and records needing to be kept makes HCD a suitable candidate for an imaging and workflow solution that will result in improved efficiency, security, and customer service.

### Project Goals

Project will provide increased security and integrity of HCD records; reduce the labor-intensive record retrieval and re-filing process; expedite workflow processes through an electronic workflow management system; provide simultaneous and instant access to records; and reduce costs associated with space and shelving for storage of paper requirements.

### Progress to Date

DHCD is engaged in completing the Requirements phase in FY 2008. This phase will be complete in July 2008.

### Project Budget

FY 2008 funding of $125,000 provides for a requirements analysis for the Department of Housing and Community Development (HCD) to improve and augment its housing management and financial programs. No funding is available in FY 2009.

### Return on Investment

Document imaging and workflow projects are expected to increase the security of records, protecting them from unauthorized access; reduce staff time required to retrieve and re-file documents; reduce processing time as many of the workflow efforts will streamline the reviews required; provide a viable, accurate document system for old and one-of-a-kind documents; promote telework; reduce error rates as much of the manual data entry will be eliminated; and reduce the space requirements for maintaining paper copies of documents.

## IT0081 HOUSING MANAGEMENT SOFTWARE UPGRADE

### Project Description

Upgrade existing Department of Housing and Community and Development (HCD) software used for management of its portfolio of properties and for financial reporting. The upgraded software will be a full-featured, financial accounting package that includes management and compliance tools for all federally funded housing programs, as well as for commercial and tax credit properties.

### Project Goals

Project will support Housing and Urban Development (HUD) compliance through use of a single, integrated application

### Progress to Date

- October 07: Software installation and data migration
- Nov – Dec 07: Data and Financial Reconciliation
- Jan 2008: Process analysis and documentation began, vendor visits are scheduled for every other week. Training will continue through Dec. 2008

### Project Budget

FY 2008 funding of $125,000 provides for the upgrade of existing Department of Housing and Community and Development (HCD) software used for management of its portfolio of properties and for financial reporting. No additional funds were requested in FY 2009.

### Return on Investment

The upgrade will promote full Housing and Urban Development (HUD) compliance through use of a single, integrated application. In addition, the

upgraded version will enhance security and audit tracking, as well as improve Web access. Furthermore, this upgrade will align HCD with current County technology development standards, and it will support improved HCD business processes among caseworkers.

## IT0085 Loan Processing System (LPS-IDMS) Replacement

### Project Description

The Fairfax County Department Of Housing and Community Development (HCD) provides loan assistance to resident homeowners under a number of County and Federally sponsored programs. These Loan programs are made available to assist low-to-middle income residents in securing and maintaining affordable housing. Loan programs are provided, accounted for, and controlled under existing subfunds.

### Project Goals

To replace HCD's twenty three-years old Loan Processing System with a COTS program that facilitates both current loan processing and tracking need, as well as retaining Mainframe connectivity and DOF functionally. Through the years both the functionality and technology associated with the existing system have become dated and the Agency's needs for a more robust loan processing system have grown. Implementing a current loan servicing system that utilizes web technology to properly account, service and report on the excess of $46 million in loans in the HCD portfolio, many of which are not captured in LPS, will allow for enhanced revenue, and compliance with federally mandated HUD programs.

### Progress to Date

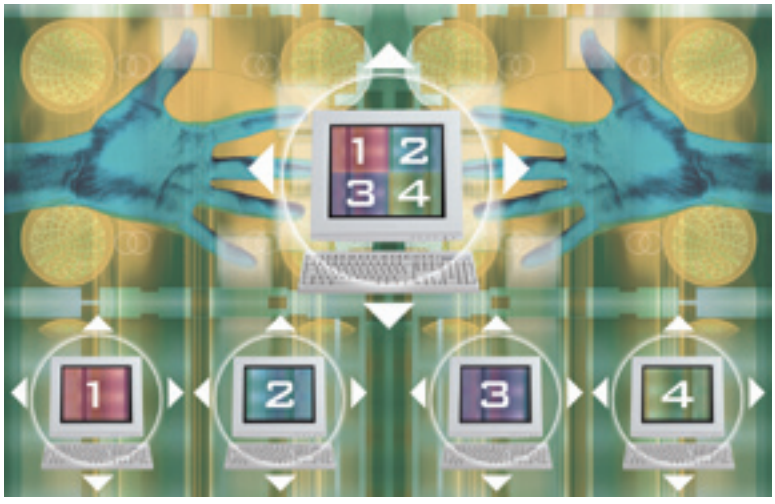
New project in FY 2009.

### Project Budget

FY 2009 funding of $126,000 is provided to replace existing Department of Housing and Community Developments software used for its loan processing.

### Return on Investment

To address current shortcomings of the LPS system, the County would need to invest one to one and a half years of time at an estimated cost of $300,000 and $500,000 in programming fees alone and discontinue its plan to phase out the inefficient IDMS and its associated maintenance costs, which would still leave it with antiquated system that would be costly to maintain and enhance. Procuring and implementing a loan servicing system that utilizes web technology is needed to properly account, service and report on the excess of $46 million in loans in the HCD portfolio, many of which are not captured in LPS. It would also allow for enhanced revenues through the use of database matches (e.g., the Clerk of the Court, DPZ, etc.) which would allow HCD to independently determine if the conditions for loan repayment have become due. Given the large dollar amounts in our Proffer and various deferred loan programs the opportunities to enhance revenues or deter the loss of funds justify the need for this new system.



## 3.7 PLANNING AND DEVELOPMENT

### IT0011.12 COMPREHENSIVE PLAN/ZONING ORDINANCE AUTOMATED WORKFLOW

#### Project Description

The Comprehensive Plan is a 5-volume document comprised of over 2000 pages of text and more than 1000 graphics in the form of maps. The Plan text currently exists as several Microsoft Word files. The graphics are stored as 220 dpi bitmap files which are inserted into the Word files. The Word documents are currently considered unstable due to several generations of conversions from legacy word processing applications. The Plan is amended multiple times during the year as amendments are approved by the Board of Supervisors and the Planning Commission. A Document Management System (DMS) will provide an audit trail for these amendments that is necessary to conduct research on Plan history to determine when a particular amendment was adopted. This audit trail will make research more efficient. The Zoning Ordinance exists as several Word documents for a total of approximately 1500 pages of text and seven pages of graphics. Similar to the Comprehensive Plan, the Zoning Ordinance is updated on a regular basis as amendments are adopted by the Board of Supervisors and the Planning Commission.

#### Project Goals

The workflow component of a Document Management System will save staff time and reduce paper by allowing for an electronic circulation of draft staff reports, amendments, memos, letters, and other staff documents for review, editing and approval. DPZ staff work results in the production of many types of documents such as paper copies for publication or distribution to the public, as well as Web pages and other electronic products. A DMS will increase efficiency in the production of staff work. It would also improve the speed at which staff can make updates to the Plan available. Currently the Plan exists on the Web as approximately 40 large PDF documents (most from 2 to 5MB in size). The Zoning Ordinance exists on the Web as approximately 30 PDF documents. A hybrid Web Content/Document Management System will offer improvement in presentation, search functionality, and performance for both the Comprehensive Plan and Zoning Ordinance on the Web.

#### Progress to Date

Staff has prepared preliminary process flows for both the Comprehensive Plan review and amendment process and the Zoning Ordinance amendment process.

#### Milestones

- *Conduct discussions with contractor to document the requirements for security, user interface and navigation, search, versioning and infrastructure, October 2008*
- *Prepare design documentation to address application configuration and customization items that have been identified during the requirements analysis phase, January 2009*
- *Provide a design for the technical infrastructure required to support this application, March 2009*
- *Conduct required application configurations and/or customizations, May 2009*
- *Facilitate the County's testing of the solution within the County's environment, July 2009*
- *Train DPZ and other relevant County staff, September 2009*
- *Transition of application from a test environment into production, October 2009*

#### Project Budget

FY 2006 funding of $244,200 supports the project. No additional funding is requested for FY 2009.

#### Return on Investment

A Document Management System (DMS) will save staff time and reduce paper by allowing for an electronic circulation of draft staff reports, amendments, memos, letters, and other staff documents for review, editing and approval. DPZ staff work results in the production of many types of documents such as paper copies for publication or distribution to the public, as well as Web pages and other electronic products. A DMS will increase efficiency in staff work. It would also improve the speed at which staff can make updates to the Plan available. The current system used for management of the Comprehensive Plan (the Plan) and Zoning Ordinance are outdated and do not take

advantage of the level of technology used in many "e-Government" organizations today. A move to a hybrid Web content/Document Management System will provide Fairfax County with a state-of the art solution for presentation, management, storage, retrieval and archiving for the Plan and the Zoning Ordinance both in-house and on the Web. The acquisition of a hybrid Document Management System (DMS) is in line with the Board's desire to become a paperless e-Government entity.

## IT0055 FAIRFAX INSPECTIONS DATABASE ONLINE (FIDO)

### Project Description


The Fairfax Inspections Database Online (FIDO) project replaced the legacy mainframe Inspection Services Information System (ISIS) in DPWES and multiple standalone databases in other agencies. This new system provides a foundation for future E-government applications related to land development, building construction, fire inspection services, environmental health services, and complaints management. This multi-agency project enabled data sharing between agencies and enhances one-stop-shopping for the customer. The enhanced cross-agency information flow provided by the new system significantly simplified the permitting process by streamlining multi-agency review and approval processes. The new system also enabled staff to develop a focus and orientation towards individual construction projects as opposed to maintaining a focus on the permit process itself.

### Project Goals

The goal of the FIDO Project was to provide a single database solution that met the needs of the involved agencies in shared and similar processes. The new FIDO system was integrated with numerous systems (Land Development System, Integrated Assessment System, and Master Address Repository System, GIS) to provide a more seamless process throughout the lifecycle of construction projects. Other goals for this project included enhancing customer service by streamlining the permitting process, reducing the timeframes for permit issuance, plan review, and inspections, and allowing the customers and County agencies more direct access to the permitting process and data.

### Progress to Date

In addition to the replacement of ISIS, FIDO replaced four legacy complaint (i.e. land use code enforcement) tracking systems previously used by DPZ, FRD, DPWES and the Health Department. FIDO is currently being used by these agencies (and the recently established Strike Team) to investigate complaints regarding alleged violations of the County's Zoning, Noise, Fire Prevention, and Health and Safety Menace Ordinances.

- The contractor licensing phase of the FIDO project was successfully completed and has been in production since 2004. The contractor licensing module features system interfaces with both the State's Contractor Licensing database and the Fairfax County Business License database; allowing the state mandated license verification process to be streamlined for permit issuance. The FIDO licensing module also replaced antiquated contractor licensing systems used by DPWES and the Health Department for the issuance of local contractor licenses.
- FIDO's Permits Module replaced the mainframe-based ISIS system at DPWES in March 2006, and was expanded in S at the Fire and Rescue Department (FRD) in September 2006 to include the License and Use modules. These particular modules support the issuance of Fire Prevention Code Permits by the Office of the Fire Marshal for activities that present a higher risk of fire; i.e., tents, blasting, propane, hazardous materials, etc.

- FY 2007 FIDO deliverables included the implementation of the Permits and Cashiering Modules at the Health Department's Environmental Health Division to support the issuance of pool permits, and licenses for beauty salons, hotels and camp grounds.
- In October 2008, FRD building reviews and inspections were seamlessly integrated into the existing DPWES Building Permits module to further enhance information available across county agencies with respect to construction issues.
- Follow-up FY 2008 Permit Module tasks focusing on web based permit application submission capabilities for customers, and providing additional DPWES permit types (elevators, NON-Residential Use Permits, Residential Use Permits) are in progress.
- FY 2008 activities also included the expansion of the Code Enforcement Module (i.e., Complaints Module) at the Department of Public Works, and the Fire and Rescue Department.
- The FIDO Code Enforcement Web page was expanded to include land use code violations managed by FRD, HD, and DPWES.
- A wireless field inspection system for DPWES's building inspectors that will interface with FIDO is currently under development, and is scheduled for deployment during the summer of 2008.
- Wireless system projects for the remaining FIDO agencies (FRD, Health, DPZ) will start upon completion of the DPWES wireless system.

## Milestones

- *Implementation of DPZ Complaints Management System , September 2003*
- *Integration of FIDO with GIS, October 2003,*
- *Implementation of Contractor Licensing Module, January 2004*
- *Expansion of Complaints Management System - Health Department, September 2004*
- *Integration of the new system with the LDS database, December 2004*
- *Traditional ISIS replacement, Permitting, Plan Review, inspections, March 2006*
- *Expansion of Permitting, Inspections and License Modules - FRD, September 2006*
- *Expansion of Complaints Management System - FRD and DPWES, Spring 2007*
- *Integration of FRD Building reviews and inspections with DPWES Permit Module, Fall 2008*
- *Expansion of Permitting, Inspections Modules -Health Department, Spring 2008*
- *Integration of FRD building reviews and inspection with DPWES Building Permits, October, 2008*
- *Design and Installation of FIDO Dynamic PORTAL (i.e., Web) for Permits and Inspections is ongoing and will be implemented for each agency*

## Project Budget

No funding provided in FY 2009.

## Return on Investment

Savings will be realized through a streamlined system that will enable the development and construction industry to work more productively within the County and in turn enhance the tax revenue base. The development and construction industry will recognize significant cost reductions that are presently incurred due to construction delays and delays in occupancy or use of buildings. The County's revenue stream is also enhanced by increasing the speed in which commercial and residential buildings are processed through the system and brought to completion, i.e. the sooner buildings, homes and tenant spaces are completed, the sooner they become a source of revenue for the County. The development and construction process of the County will be perceived as being more business friendly and will attract additional businesses to bolster the tax base. It should also be noted, that the replacement of the ISIS system was necessary to create a platform for future e-permitting and e-government initiatives that may more directly enhance revenue (e.g. charges for access to data, charges for enhanced optional services, etc.).

## IT0063 FACILITY SPACE MODERNIZATION

### Project Description

This is a multi-phased project to upgrade the county's conference center (shared conference rooms in the Government Center) and meeting rooms in County buildings with technically advanced conference/ meeting capabilities to allow users to have automated support for a variety of meeting purposes, and fully engage in collaborative events. This project removes deficiencies to facilitate effective and efficient group discussions by adding technology and streamlining the room preparation process. The largest rooms in the Conference Center will be outfitted with technical equipment. County agencies, boards, authorities, commissions, nonprofit organizations and civic associations will be able to conduct training, deliver presentations and hold more effective collaborative sessions, and eliminate the need for ad-hoc equipment set up and preparation. Audio/ visual equipment will be accessible, available and ready to use without needing staff set-up time. Customers will no longer need to provide their own projection or A\V equipment, or endure wait time while equipment is found and set up for them. The project will optimize use of County resources such as time, personnel and space to effectively and efficiently conduct County business. Additionally, the project will support Fairfax County's Telework Program by enabling participation in meetings from locations away from the workplace.

### Project Goals

The mission and objectives of this project are to provide state of the art technology to allow customers to fully engage in collaborative events. The project will enable leaders and managers to utilize County resources such as time, personnel, and space to effectively and efficiently conduct County business and educate/train its employees. It is consistent with the mission of the County to provide comfortable/ livable meeting spaces and to connect people and places. Additionally, the project will support Fairfax County's Telework Program by enabling participation in meetings from locations away from the workplace.

### Progress to Date

The initial conference room modernization phase for conference rooms 9 & 10 were was implemented and completed in FY 2005. The second phase, the upgrade of the remaining conference rooms was implemented in FY 2006 and was completed in May 2007. The third and final stage, which includes the installation of an electronic message board, will be completed September 2008.

### Milestones

- *Conference Rooms 232, 7, 8, Board of Supervisor, Dec. 2006*
- *Conference Rooms 315C, 120C, 6 – April 2006*
- *Conference Rooms 2 and 3 – April 2007*
- *Electronic Message Board – September 2008*

### Project Budget

FY 2005 funding of $100,000 provided the start-up required to allow Fairfax County conference center customers to fully engage in collaborative events. FY2006 funding of $99,208 from Fund 104 and $100,000 from Fund 105 were provided for the second year of the project to upgrade and modernize existing government center conference rooms, equipping them with the latest technology. The remaining balance of Fund 104 and 105, $58,205, will be applied to the purchase and installation of the digital message board. No additional funding requested for FY 2009.

### Return on Investment

This project will improve communication capabilities for internal and external meetings, additional augmentation for collaborative crisis management and emergency response, work force training and development activities in an effective and efficient manner, and provides flexibility for and visual equipment for Conference Center users. Cost savings will be gained by the reduced County staff time required to prepare a room for a meeting/presentations on ad-hoc basis. Based on FY 2004 experience of one-hour setup and 30-minute take down for each room, (with a $35 average staff hourly rate and 3,000 large meetings could generate the staff time value in savings of $157,500 annually). The County will avoid the need for each agency to invest in additional audiovisual equipment and again reduce travel time and associated cost.

## IT0064 PROFFER DATABASE AND STATUS SYSTEM

### Project Description

The proposed proffer system will provide an adaptive technical architecture that will supplement Fairfax County's existing proffer business architecture. The system will help enable the implementation of reengineered Proffer monitoring, implementation, and fulfillment processes and activities. The objective of PRODSS is to provide a quick response reporting tool that will summarize and display key proffer data elements in a format that is flexible, user-friendly and project-specific.

### Project Goals

The primary goal of PRODSS is to provide County staff with a proffer monitoring tool to help streamline the process of verifying proffer compliance, enhance the communications and coordination between responsible agencies, and help provide reliable and accurate proffer status and information. The project will also provide a foundation for future e-government initiatives related to proffer monitoring and enforcement through improved proffer business processes.

### Progress to Date

FY 2005 funding provided for the initial phase of the project which included a requirements analysis, assessment of existing systems, business process re-design (BPR) recommendations, and high level database design. This phase was completed in 2006. Follow-up DPWES Phase I activities have focused on an impact analysis of the BPR recommendations on DPWES and inter-agency proffer processes given existing budget and resource levels. Senior management in DPWES is assessing any future changes in the proffer process.

### Milestones

- *Requirements analysis and review of existing County proffer business architecture, September 2005*
- *Assessment of existing systems/proffer support capabilities, November 2005*
- *Recommendations to improve the current business process to ensure proffer fulfillment and effective interaction with proposed system, January 2006*
- *BPR Impact Analysis, June 2006 - September 2008*

### Project Budget

FY 2005 funding of $188,700 was provided to support the design of a database to make proffers easily accessible to all those who create, enforce, research, and track proffers. Additional FY2006 funding of $450,168 provided for the system construction phase of the project. FY 2007 funding of $137,715 provided infrastructure modifications to support the project. No additional funding is requested in FY 2009.

### Return on Investment

Though additional time will be required to enter data into the database, review staff will spend significantly less time researching paper records to determine the existence and fulfillment of proffers. The county will avoid potential costs associated with failure to enforce or implement a proffer. Staff will input data on proffers electronically; status on proffers will be available electronically, improving access to citizens, the board of supervisors, and developers. Proffer triggers such as RUP and Non-RUP estimates will be automated. An up-to-date accounting of proffer status will be maintained.

## T0065 FACILITY MAINTENANCE MANAGEMENT SYSTEM

### Project Description

This project supports the acquisition of an Integrated Facilities and Grounds Management System as a single, integrated facilities information resource for the Facility Maintenance Department (FMD) and the Fairfax County Park Authority (FCPA). An updated system will increase the effectiveness and efficiency of staff and the utilization of capital resources required to maintain and manage County and Park facilities and properties. The new system will support the goals of the project through the enhancement of data collection methods and tools, improved warranty tracking, elimination of redundant facilities information databases, user friendly interfaces for internal and customer access, and a strong reporting system.

### Project Goals

The goals of this project are to acquire and implement a state of the art Computer Integrated Facilities Management (CIFM) System. FMD and FCPA hold the greatest portion of responsibility for the maintenance of the County's largest and most valuable physical assets: its properties, facilities, and the subsystems that keep them operational. The maintenance aspect must be fully integrated with the management of those assets by encompassing all of the functional components and activities that support Lease Management, Space Management and scheduling, Inventory Control, Grounds Management, Contracts Management, Utilities Management, Physical Security, and Emergency Preparedness/Disaster Recovery. By implementing a web based, "one stop shop" for facilities information, we will be able to improve internal efficiencies as well as provide more accurate, complete, and timely information to customer agencies. By consolidating the redundant facilities tables and databases maintained by various branches within FMD as well as by the participating "partner" agencies, the County will gain the benefit of more consistent data and improved interagency coordination of information.

### Progress to Date

The Phase I – **Portfolio and Demand Maintenance** – was implemented in March 2007, and a portion of Phase II – **Real Estate (Property Management and Leases)** – was implemented in April 2007. Space Management is estimated for completion by the fall of 2008, and phases III and IV will be implemented in FY 2009.

By March 2009, FMD and the Park Authority anticipate the following functionality and software modules to be completed:

- Space Management
- Planned Maintenance Scheduling
- Capital Project and Project Management
- Wireless handheld device implementation
- Inventory Management
- GIS integration

### Milestones

- *RFP Issued, August 2004*
- *Vendor Demos, December, 2004*
- *Contract Negotiations, May 2005*
- *Contract Issued, June 2005*
- *Develop implementation strategy, July 2005*
- *Requirements Analysis, Process adjustments, November 2005*
- *Data Mapping/Conversion, November 2005*
- *Identifying hardware needs / Procurement, June 2006*
- *Application Installation, September 2006*
- *Phase I – Portfolio and Demand Maintenance, February 2007*
- *Phase II – Real Estate, April 2007*
- *Contract negotiations with integrator, July 2008*
- *Phase II – Space Management, September 2008*
- *Phase III – Preventive Maintenance and Field Data Collection (Mobile Devices), December 2008*
- *Phase IV – Capital Project Management – February 2009*
- *Phase V – Post implementation Support, March 2009*

### Project Budget

In FY 2005, funding of $792,250 was provided for FMD to replace their existing Maintenance Management System (which covers work orders and asset inventory), update the current hardware/software capa-

bilities, and enhance customer use of the data. FY 2006 funding of $548,750 provides for a partnership between FMD and the FCPA to pursue a joint system, enabling the FCPA to retire their 16 year-old, out-dated facility management system. FY2008 funding of $392,000 provides funding for the implementation of 75 wireless devices and the implementation of the Project Management module. FY 2009 funding of $188,218 provides integration services required for the completion of project milestones.

### Return on Investment

Extensive savings will be realized through the streamlining of communications and processes throughout FMD and the Park Authority, the most quantifiable savings derived from time saved by field personnel (crafts, trades and grounds personnel) and Work Control Center staff within the agencies. The replacement system will provide bar coding and wireless technology to greatly improve the speed and consistency of data collection necessary to better utilize field staff by the elimination of excessive hand recording of information that is entered into the system at a later time and/or by a different individual. Accurate and timely data collection plays a vital role in improving time management for field staff and will ultimately work to extend the life cycle of equipment. Improved data collection in the field, along with a web based customer request and inquiry interface will save time for staff in terms of handling customers' status inquiries and work order processing from initiation to close out. With the implementation of this system, duplicate work orders, work performed by vendor for inventory that is under warranty and multiple tasks on a work order will all equate to savings by cost avoidance.

## IT0067 STORMWATER MAINTENANCE MANAGEMENT SYSTEM

### Project Description

This project will consolidate a number of stand-alone databases used for work order, complaints, and infrastructure inventory in the Maintenance and Stormwater Management Division (MSMD) into one streamlined, integrated maintenance management system. Data is currently captured in multiple, mostly stand alone, applications, some of which are in old technology programs and unable to be run on a network. Most of the data is not linked, requiring repetitive input of information, costing staff time and increasing the likelihood of input error. Non-integrated data also makes it difficult to consolidate and provide information necessary to meet mandated reporting requirements.

Replacement of existing databases with an integrated system will tie together work orders, materials, equipment, complaints, GIS and infrastructure inventories; allow data sharing across agency and with partner agencies; result in better customer service by allowing residents, Board of Supervisor member offices, and others easy web-based access to information concerning complaint status, work order status, and infrastructure maintenance history by location (e.g., history of flooding at a particular site).

### Project Goals

Project goals seek to increase operational efficiency by streamlining the work order, inventory tracking, and reporting processes; improve decision-making through the increased availability of pertinent information and enhanced analysis; provide synchronization of GIS data for services requests, work orders and asset management, and also allow cross-referencing of inventory with other GIS data layers, creating maps for work orders, providing more detailed information to staff and customers; reduce data entry to reduce errors and allow better quality control/quality assurance of data; provide better tracking of "trouble spots" (i.e., systems or structures with recurring maintenance problems); and consolidate reporting capabilities for budget preparation and performance measurements.

### Progress to Date

The Requirements Analysis Phase for this project was completed during FY 2007. Based on the results of the Requirements Phase, FY 2008 activities included a market analysis of compatible COTS packages. COTS selection and contract award activities are expected to be completed by the end of FY 2008.

### Project Budget

FY 2006 funding of $335,993 supported the completion of the Projects' Requirements Analysis phase, and the remaining balance is expected to support the procurement and implementation of the COTS solution. FY 2009 funding for this project is not required.

### Return on Investment

The benefits of an integrated system include reduced operational costs, migration of aging legacy systems to a modern database, integration of agency data, decreased reliance on preprinted forms and photocopies, an improved level of completeness and accuracy in data collection efforts and improved access to information for decision making. The benefits cannot be obtained with the current technologies and applications. Data will only be entered once at the source. Cost savings will result from the elimination of data entry redundancies existing between the present materials, daily labor time entry and work order databases. Web-based customer complaint/maintenance request and customer inquiry interface will save time for staff in terms of handling customer's initial reporting of problems, status inquiries and work order processing from initiation to close out. In addition, the proposed system will provide public access to data in appropriate cases such as on-line complaint/maintenance requests and work order status, thereby eliminating significant call-taking functions, as well as providing customers direct access to data.

## IT0077 LAND DEVELOPMENT INDUSTRY ENHANCEMENTS

### Project Description

In FY 2005 the Board of Supervisors approved a series of fee increases for Land Development Services (LDS). The industry supported these increases and requested that, as part of their support, the Land Development Process Improvement Initiative be created. The Initiative is a partnership among Fairfax County government, the Northern Virginia Building Industry Association, the National Association of Industrial and Office Properties, and the Engineers and Surveyors Institute. The committee was tasked with evaluating and recommending improvements to the County's land development process. The Board's Development Process Committee has been updated periodically on this initiative's recommendations as requested by the Board of Supervisors.

These recommendations included technology and policy/programmatic improvements. They suggest exploring the implementation of queuing management and customer flow software that can better manage the flow of transactions and throughput. The queuing system will inform staff that someone is waiting for a particular category of service and track customer wait time. The customer will be directed by display systems where to go next. The system will generate metrics on service levels to assist in staffing decisions. Other recommendations include online capability for Engineers/Developers to review comments from Site Review in Land Development Services (LDS) and other review agencies. In addition, triggered and automatic e-mails will provide Engineers/Developers notification of site-related plans that have reached certain milestones in the life cycle of the plan.

### Project Goals

The goal of this project is to expedite the process by which site-related plans are cycled through plan intake, review, and multiple resubmissions. This system is planned to be completed over a two year time period.

### Progress to Date

The email notification feature to apprise Engineers/Developers of the status of Site Plan lifecycle milestones was completed during the fourth quarter of FY 2007. Web based review capabilities of LDS and Review Agency comments for Engineers/Developers were completed during the third quarter of FY 2008.

A request for proposal (RFP) for the queuing and customer flow management system was prepared in 2007. Vendor selection is anticipated in the 4th quarter of FY 2008 with implementation beginning in the 1st quarter of FY 2009.

### Project Budget

FY08 funding of $150,000 will support the procurement, installation, and configuration of queuing system management and customer flow software. This figure includes hardware and professional services required to complete the project. Therefore, additional FY 2009 funding is not required.

### Return on Investment

Automatic notification will significantly streamline the process for industry and relieve some of the workload of County staff. Engineers/Developers and their staff must travel to the County to physically retrieve their comment letters from reviewers. This results in project delays and inefficient use of time. Enabling Engineers

to download comments from the web will be a significant improvement to customer service. Currently, most outside agencies send their comments by courier. The courier generally operates only a few times a week. There are approximately 20 agencies involved in the review of site-related plans. Having comments available electronically to both applicants and County reviewers will significantly improve the efficiency of the exchange of comments and the review process as a whole. The queuing system will better manage the flow of customers and staff and will have a significant impact on wait times. Currently, the variability in types of permit applications to come in from day-to-day or at different times of the year can be difficult to manage due to the variability in types of permits and the knowledge level of customers and technicians. Furthermore, not all technicians are proficient in processing all permit types. There is a wide range in the complexity and processing time of individual permit types. Optimizing customer flow will improve customer service and will create a more relaxed atmosphere for all customers and for staff as well.

## IT0082 LAND USE INFORMATION ACCESSIBILITY INITIATIVES

### Project Description

During January 2006, the Board of Supervisors established the Land Use Information Accessibility Advisory Group ("Advisory Group"). The purpose of the Advisory Group was to review the ways in which land planning and development information is made available currently to the public, to make recommendations for accessibility improvements, and to develop a high-level plan of action. The Advisory Group made a number of recommendations which were accepted by the Board of Supervisors in January 2007. See http://www.fairfaxcounty.gov/landusecomm/ for the final Advisory Group report.

### Project Goals

Project goals will focus on improving the ability of citizen and business constituents to easily access information concerning land use planning and development activities in their communities.

### Progress to Date

During FY 2007 LDSNET web page enhancements were made to provide two new inquiries; the Search Land Use Information by Address, and the Search Land Use `Information by Magisterial District. Both of these functions also supported searching by, and accessing spatial views of land development information on a map. During FY 2008 staff addressed several Advisory Group recommendations that included:

- Improving navigation between the LDSNET & GIS My Neighborhood web pages for common data elements,
- Expanding the Search by Address/Search by Magisterial District features to incorporate building permits and additional Plan types/Plan history,
- Expanding the LDSNET web page to include Site and Rezoning plan summaries in downloadable PDF files,
- Documenting requirements for citizen email notification of Site/Rezoning plan submissions, and 3D imagery tool integration for the My Neighborhood web page.

Long range plans will focus on GIS My Neighborhood web page improvements to include information concerning rezoning cases, site plan submissions, and building permit information relevant to address-specific web inquires. This will include summary reports and GIS map displays of active land use activities along with community information concerning elected officials, school pyramids, parks and recreation facilities, and public safety locations (i.e. police and fire/rescue stations), etc.

### Project Budget

FY 2009 funding is not available for this project.

### Return on Investment

The FY 2007 & FY 2008 projects were intended to streamline the steps required for the constituent to get to relevant information, and make the navigation easier and more intuitive. Through these efforts, Fairfax County is showing its commitment to make the land use process and information even more open, inclusive, and citizen-oriented. These projects will further the ability of citizens to be aware of land use information affecting their neighborhoods, and to participate in the process. This information will be available 24/7 over the County's website.

## IT0087 PARKNET SECURITY UPGRADE

### Project Description

The project is an IT hardware and software integration project to upgrade and bring ParkNet, Fairfax County Park Authority's aging business application into compliance with the recently enacted Payment Card Industry Standards (PCI) and replace aging hardware and operating system platforms with a County-compliant, Windows-based hardware and operating system platform to serve the Park Authority and its citizen-customers.

### Project Goal

The project goal is the replacement of the ParkNet hardware and operating system platforms with a County-compliant, Windows-based hardware and operating system platform to serve the Park Authority and its citizen-customers. This initiative ensures conformity with current supportable IT architecture and security standards as well as compliance with the Payment Card Industry mandates for accepting credit card payments over the internet and IVR.

Project objectives include: securing the Parknet application from the threat of virus infection by using County-standard tools for anti-virus protection; securing the ParkNet application from threat of environmental mishap and promote Continuity of Operations Planning (COOP) by relocating it from the Herrity Building to the Enterprise Operations Center; increase availability to staff and citizens, placing the administration of the ParkNet platform under the auspices and standards of the agency's organizational unit; providing a faster application for agency staff (which benefits county citizen-customers); and eliminate the need for special DEC Alpha Cluster and Open VMS skill for Automation Services Branch staff.

### Progress to Date

New project in FY2009.

### Project Budget

FY 2009 funding of $179,571 is provided to address project needs collaboratively with the Fairfax County Park Authority.

### Return on Investment

The ParkNet application represents a significant investment of resources in the core software product and in the custom enhancements which have been specified and implemented over the years the agency has owned the product. The migration from the current hardware and operating system platforms to a new Windows Server 2003-based platform preserves the investment the agency has made without replacing the core software product.

The ParkNet system is critical to a range of agency core functions including recreation center and golf course point of sale activities to program and camp registration via the internet and IVR portal, nature centers, and lake front parks. This initiative ensures conformity with current supportable IT architecture and security standards, as well as compliance with Payment Card Industry mandates for accepting credit card payments over the internet and on the IVR. Opportunites exist for enhanced revenue because of increased uptime and availability of the ParkNet system and the Internet class registration capability. The project protects the application, agency information, and citizen information by moving the server the County's Enterprise Operations Center (EOC), and promotes Continuity of Operations Planning (COOP) by involving County staff and resources in the protection of the data.

# SECTION 4
## MANAGEMENT CONTROLS AND PROCESSES

# MANAGEMENT CONTROLS AND PROCESSES

## FEATURED IN THIS SECTION

# SECTION 4
# MANAGEMENT CONTROLS AND PROCESSES

## 4.1 IT MANAGEMENT FRAMEWORK

### Background

In FY 1994 the Fairfax County Board of Supervisors created a citizen Information Technology Advisory Group (ITAG) to study the use and management of Information Technology (IT) by the County government. The ITAG was composed of eight private sector executives from Fairfax County based companies. Two committees supported the ITAG, one made up of staff from their own corporate organizations and the other comprised of County staff.

The work of the ITAG resulted in the creation of the Department of Information Technology (DIT). By consolidating several separate County organizations already involved with application programming, infrastructure, data center operations, telecommunications, Geographic Information Systems (GIS), mapping and technical training, the Department of Information Technology was formed. The new DIT also included centralized resources for system security, standards, architecture, e-government, technology planning and administration. ITAG also recognized that larger County departments would still need to retain some IT staff in addition to utilizing central DIT resources, and that agency business specific projects such as technology based industrial systems or small scale point solutions would be better handled by the agency rather than DIT. For these instances DIT would serve as a consultant, mentor or project partner. However, departmental IT standards, planning and budgeting would continue to follow the direction set by the County to ensure consistency and investment value.

ITAG further recommended that:

- *The County create a Chief Information Officer (CIO) position to oversee DIT and technology Countywide*
- *The CIO should report directly to the County Executive as a Deputy County Executive level position*
- *IT be treated as an investment and given consistent funding annually*
- *The CIO be responsible for IT planning Countywide and the expenditure of major IT project funds*
- *The County create a funding mechanism to ensure IT employees are trained properly and their skills are kept up to date*
- *An annual IT plan is written to detail IT direction, projects and project portfolio budgets*.

When ITAG recommended the technology modernization fund, it recommended that the County provide funding of approximately $20 million per year for investment in IT in order to sustain the Board's goals for service efficiencies and effectiveness at optimal cost. This fund provides money for the software, hardware and services included to deliver the projects. The modernization fund represents the County's enterprise wide and key departmental projects, which are closely tied to business process improvement and strategic goals.

Based on the initial ITAG recommendations, the following initiatives have been implemented:

- *Centralization of the major IT functions for the County (FY 1995)*
- *Creation of a CIO function (FY 1995)*
- *Standardization of technology investments across the County (FY 1995)*
- *Annual technology project review as part of the budget process (FY 1995)*
- *Creation of a technology modernization fund (FY 1996)*
- *Funding for technology training (FY 1996)*

- *Project steering committees, formal project reporting and governance framework (FY 1996)*
- *Creation of a permanent private sector advisory group (FY 1998)*
- *Creation of an internal Senior Executive IT steering committee (FY 1999)*
- *Launch of an internal project management certification program (FY 1999)*
- *Creation of an enterprise technology architecture committee (FY 2001)*
- *Creation of an IT Investment Portfolio management position in DIT (FY 2002)*
- *Creation of an enterprise technology architecture function in DIT (FY 2002)*
- *Development of strategic planning alignment process (FY 2003)*
- *Strengthening and reorganization of IT Security leadership and capability (FY 2003 and 2004)*
- *Merger of information architecture, web services and document management functions(FY 2004)*
- *Establishment of Architectural Review Board in DIT (FY 2005)*
- *Reorganization to establish resource capability that addresses regional homeland security interoperability requirements, and creation of a position dedicated to integrated Public Safety and Emergency Management strategy (FY 2005)*
- *Establishment of a Public Safety IT Governance Board (2005).*
- *Re-designated CIO position as Deputy County Executive (DCE) for Information Departments and designated Director of DIT as Chief Technology Officer (FY 2006)*
- *Established E-Gov Executive Committee (FY 2007)*
- *Created Customer Service function for enhanced Help Desk end-user tech commodity devices in DIT (FY 2007)*
- *Established Services-Oriented Architecture Team (FY2007)*
- *Adopted ITIL Framework for Service Support (FY 2007)*
- *Established Deputy Director to enhance executive capacity on IT service delivery and operational efficiency, and emergency support initiatives (FY F2007)*
- *Establish Court Technology Leadership position and Governance structure (FY2007)*
- *Enhance Change Management and Configuration Management Processes (FY2008)*
- *Released new strategic plan and updated Systems Development Life Cycle Standards (FY2008)*
- *Established Leadership for National Capital Region Interoperability Initiative (FY 2007)*
- *Legacy Replacement System (County and Schools) Steering Committee (Fy 2008)*
- *Develop Technology Strategy Map (2008)*

## Executive Governance

The Deputy County Executive (DCE) is responsible for the overall direction of technology and information initiatives. The Board of Supervisors has expanded the role of the DCE since the position was created as CIO in FY 1995. Today, the DCE is responsible for a broad range of information-related departments.

The Director of the Department of Technology is also the County's Chief Technology Officer (CTO). The CTO develops strategy, policy and processes for technology county-wide. The CTO creates the agenda for IT and communications technologies, and directs the activities in the Department of Information Technology.

The Senior IT Steering Committee is the County's executive technology oversight body, providing policy, asset and resource authorization and guidance for the County's IT program. This group includes the County Executive, Deputy County Executives, Director of the Department of Information Technology/ CTO, and Director of the Department of Management and Budget. The committee gets additional input from the county's Senior Management Team made up of all agency heads. The committee meets monthly to look at specific IT initiatives, opportunities and issues, sets the County's IT strategy based on the Board of Supervisors' direction, and approves the annual IT investment plan which is delivered by the CTO to the ITPAC for its endorsement. The annual ITPAC agendas provides information about both existing portfolio initiatives as well as planned

initiatives and opportunities, most of which require IT investment support in either upcoming or future budget planning cycles.

The e-Government Steering Committee provides guidance and direction for new capabilities provided via the Web and other public access channels. The DCE is the chair and champion of this committee, which includes the CTO, E-Government Manger, Directors of the Department of Cable Communications and Libraries, and the Office of Public Affairs. The committee considers the impact of emerging trends such as the public's adoption of social networking and other information mechanisms in forming the County's strategy for enablement of and governance over related e-Government initiatives.

Finally, major investments such as the Public Safety Information Systems project and Legacy Systems Replacement project have governance boards typically chaired by the sponsoring Deputy County Executive with membership including the affected directors of sponsor departments and the CTO. These boards/committees oversee, provide guidance and resolve related policy issues to their agencies project manager(s) and teams to ensure scope and delivery.

## Project Investment Prioritization and Execution

The Senior IT Steering Committee establishes funding priorities for technology projects. Based on changes in social and economic paradigms, and state mandates that must be fulfilled, the following priorities are adopted as guidelines for project funding decisions:

- Mandated Requirements
- Leveraging of Prior Investments
- Enhancing County Security
- Improving Service Quality and Efficiency
- Ensuring a current and supportable Technology Infrastructure

The process is managed by the IT Project Portfolio Office in the Department of Information Technology. For each fiscal planning cycle, Initial project recommendations are submitted by County departments as part of the annual budget process. A two-phase approach was implemented to assist in the preparation and evaluation of information technology project proposals submitted for funding. Project proposals must meet the following requirements:

- *Submission of viable projects: minimize project requests that may be beneficial to County business conceptually, however lack substantive information in critical project areas such as staffing plans, technical architecture, project deliverables and benefits;*
- *Ensure that proposed project timeframes, areas of responsibility and funding accurately reflect County procurement, budget and existing IT project commitments, as well as clearly identify the impact of the project on agency business and technical staff, and agency operations;*
- *Identify potential savings by utilizing exiting County-owned technologies or by jointly reviewing similar individual project requests to minimize IT software and hardware duplication and leverage technology investments already made;*
- *Ensure that proposed project schedules are feasible, and/or that ongoing projects are within scope and budget, and are on schedule.*

Early in the process, agencies are requested to submit both a business and technical viability analysis for each proposed project. The business analysis, reviewed by staff from the Department of Management and Budget (DMB), includes such factors as business objectives, return on investment (including cost savings, cost avoidance, enhanced revenue, non-quantifiable service benefits, staff savings and staffing efficiencies), indicators to measure success, estimated costs, business related risks and alternatives to the proposed project.

The technical analysis, reviewed by staff from the Department of Information Technology (DIT), includes such factors as proposed system architecture and its compatibility with the County's technical architecture standards, impact on existing systems, data conversion and electronic interface requirements, and staffing requirements for development, enhancement and maintenance of the project. After review by DMB and DIT, recommendations and suggestions for improvement are made to the project sponsors. Following the submittal of final project proposals, interviews for a final review are conducted by DIT and DMB senior management, who then make funding recommendations for consideration by the Senior IT Steering Committee. This process is guided by the five information technology priorities established by the Senior IT Steering Committee.

The Senior IT Steering Committee reviews the recommendation for inclusion in the County Executive's annual proposed budget. ITPAC's recommendations are included as part of the Budget Adoption process. ITPAC develops a letter supporting the strategy and themes for the proposed project funding package to the Board of Supervisors. The Board makes the final decision on funding based on alignment with the Board's goals and recommendation of the County Executive.

As stated previously, IT funding in the modernization budget represents the strategic and enterprise-wide initiatives for the County. If during the project review process a project is identified that is not strategic, does not have enterprise wide benefits, but does benefit a single department or County function, funding may be placed into departmental budgets. The department can then use these funds to undertake the project internally with existing staff or contract for services if necessary. Agencies can request that DIT manage the project if that is the best course. Departmental projects must follow the established IT standards, methodology and architecture requirements with DIT providing advisory consultation, infrastructure resources, and/or standards compliance.

Once projects are approved for funding, a steering committee is created for each project. This committee can vary in size and membership, based on the dollar value and the strategic importance of the project. A project manager is selected from the department sponsoring the project and a technical project manager is assigned from DIT and/or the user agency's technical group if one exists. Project managers are required to hold regular meetings and report progress and issues. All projects must follow the County's standards and project methodology as defined by the DCE in the IT standards. Formal architecture standards have been developed that provide further guidance to the project managers. This process is managed by the IT Portfolio Manager in DIT.

The County formally certifies project managers through a project management certification course developed by DIT, which certifies project managers to lead projects at different dollar thresholds. Once certified and assigned to an approved project, the project manager's compensation may be adjusted to reflect enhanced organizational contribution. The certification focuses on project reporting and administration, contract negotiation and management, technical architecture, business process redesign, task planning and other topics. Certification is also required for technical project managers. DIT assigns a Technical Project Manager that works with the agency Project Manager to approve the technical solution, help develop the schedule, coordinate implementation activities in DIT, and execute the technical solution. The Technical project manager is involved in the solution selection process and contract negotiations.

In addition to the Project Steering Committee, DIT may conduct periodic project reviews to track progress and support conformance to standards. DIT has established the Architectural Review Board to assist agencies in determining viability of solutions and compatibility with architectural standards and the county's infrastructure as a part of the solution competition and acquisition process. This includes members participating on Selection Advisory and Technical Advisory panels. Major IT projects with increased risk, higher strategic value, or a material degree of external visibility may receive oversight in tracking project performance and technical guidance from the PMO function in DIT.

Project investment prioritization and execution is based on the following elements that work together to create an enterprise wide process and focus for IT in Fairfax County. The process is inclusive of all agencies and ensures that selected IT solutions align with the enterprise strategic goals:

- *Executive Management*
- *Private sector and internal County board of directors roles*
- *Executive IT Steering Committee*
- *County-wide planning and review of technology investments*
- *Focus on standards, training and certification*
- *Project Steering Committees*
- *Collaboration between agencies and DIT*
- *Portfolio management*
- *Architectural Review Board*
- *Skilled project management*
- *Performance management*

In any organization, a wide range of business processes and practices support all information technology projects directly or indirectly. They are integral to both the development and the delivery of flexible, cost-effective and reliable solutions. The following sections provide a brief description of three of these processes, which have been crucial to the successful implementation of information technology solutions in the County's service environment. These processes are:

- *Strategic Planning Process*
- *Information Technology Architectural Planning and Execution*
- *IT Investment Portfolio Management*
- *Systems Development Life Cycle Standards; and*
- *Information Technology Project Management Program*

Each process is briefly discussed in terms of its origins, its larger operational context, the primary functions performed, principal business benefits achieved and future directions.

## 4.2 STRATEGIC PLANNING PROCESS

In FY 2004, DIT assembled a Strategic Planning team of staff across the IT organizational specialties to gather input on values, needs, and expectations related to the future provision of information technology solutions and services. The team was organized into external communications team, internal communications team, and IT research and development team. The resulting efforts of this initiative complemented the annual process for development of the IT Plan and operations of the Department of Information Technology.

The focus of the planning process is to ensure a comprehensive approach to IT across the enterprise, taking into consideration a number of important influences (both internal and external) of relevance to the organization. Influential factors include changing requirements and channels for G2G interaction, the need for business integration and interoperability for cross-cutting county initiatives, the rise of e-government opportunities, industry and economic trends, and similar imperatives. The strategic thinking and planning process provides a framework to make decisions around alignment of IT resources to meet the needs of county government. The Strategic Plan provides the County forethought for long term technology commitments and allocation of limited resources to achieve business objectives. This process is necessary to keep and update technology, analyze appropriateness of the technology refresh cycles, and the effectiveness and sustainability of technology investments.

Keeping up with the pace of change in technology and using technology effectively to meet government business requirements and expectations are still the most critical challenges facing information technology providers. Advances in technology enable the workforce to provide better and faster service at a reduced cost, but changes in technology are expensive and complex. New technology must be adopted carefully and integrated wisely into the existing technology infrastructure of an

organization in order to maximize the benefits in a cost-effective manner. To give focus and direction to staff within the technology department and to better plan for the future, a vision statement was adopted that aligns with the County's vision statement:

*'We are a skilled, forward thinking and responsive organization that builds partnerships in the delivery of a strong and innovative technology environment. We pursue and embrace opportunities to creatively enable and strengthen service delivery throughout Fairfax County."*

Values were developed along with strategic goals and initiatives. To review these values, goals and initiatives, refer to the Department of Information Technology Strategic Plan, October 2003.

Seven major trends impact technology solutions and enrich the County's current technology architecture. These trends maximize IT capability for users and stakeholders while presenting some deployment challenges in the face of IT resource limitations:

1. *The workplace is more mobile, therefore, job functions can be performed without being tied to a physical location.*
2. *Communication, collaboration, and information sharing methods are increasingly automated.*
3. *Information resources must be managed from a full life cycle perspective.*
4. *Security for information and communications systems and privacy of information are critical priorities.*
5. *Technical architectures are facing increased capacity and flexibility demands.*
6. *Citizens require "around the clock" access to information and services through a variety of convenient delivery channels.*
7. *Interoperability requirements drive a need for data standards and open information architecture.*

To accomplish DIT's mission and vision, strategic initiatives are categorized within three strategic focus areas to ensure well-defined purpose. Essential components of each initiative are identified to facilitate the development of agency policies and processes as DIT seeks to achieve its key objectives. The successful adaptation of these strategic initiatives positions DIT to provide an effective technology infrastructure and efficient customer service support. The overall outcome promotes County agencies working together with partners, maximizes County agency resources to provide diverse government services and optimize accessibility to county constituents and customers.

**Collaborative initiatives** are focused around governance structure and processes, technology rollout, interoperability framework, technology portfolio management and marketing. **Customer Service Delivery initiatives** are designed to improve customer service delivery and increase customer satisfaction and improve continually the quality, responsiveness and cohesiveness of products and services delivered. The third set of initiatives, **Staff Improvement initiatives**, revolves around resource allocation of personnel and skills ownership and accountability.

A major challenge is the development of comprehensive performance measurement systems. Working to overcome these challenges is a strategic priority as the importance of developing performance measurements is fully recognized. Projects have been launched for both initiatives and performance measures that will result in improvements and alignment with the intended direction of the department and the County over the next three to five years. DIT is in the process of refreshing its strategic plan and developing a balanced score card approach. Key elements of the updated plan will include more focus on the strategic direction of the agencies served, and how agency strategies will necessitate changes in DIT's future infrastructure plans and the deployment of DIT resources.

## 4.3 ARCHITECTURAL PLANNING AND EXECUTION

DIT is faced with the constant challenge of staying nimble while aligning the County's information technology strategy with the agencies' evolving business requirements. Rapid changes in business requirements can outstrip the capabilities of the IT infrastructure. Whether it takes an upgrade, an enhancement or a completely new system to meet new business requirement, it is DIT's job to deliver the solution — on time and within budget.

Disparate decisions and infrastructure investments can easily create a complex and fragile computing environment that is intolerant of change. Given the rapid pace of today's business innovation, no agency can afford to be locked into an environment that is resistant to change. There is an industry-wide emphasis to shift toward developing operational agility. In that effort, the modern IT function has to lower the cost of future changes while managing the total cost of ownership for each solution.

IT Architectural Planning breaks out of this loop by creating an adaptive architecture that "engineers out" everything that inhibits change, while "engineering in" a high tolerance for the unanticipated. Specifically, an IT Architectural Plan maximizes the effectiveness of IT, while minimizing the risk associated with IT investments, and sets a clear direction for the future acquisition and deployment of information technology in Fairfax County. IT Architecture introduces a set of architectural best practices to guide IT in the process of designing a flexible technical infrastructure, which frees the organization to provide an IT environment that will meet business requirements and address business issues.

Execution of the IT Architecture Strategic Plan insures the following benefits:

- *Better alignment of IT assets with business goals to create a shared enterprise-wide vision*
- *Supercharging the infrastructure with leading-edge technologies and "on-demand" capacity*
- *Developing a consistent framework for future technology decisions*
- *Making more effective IT investments and optimizing IT funding processes*
- *Resolving emerging business problems while leveraging the existing technology investment*
- *Reducing unnecessary database, hardware and application software redundancy, thereby providing the potential to reduce the cost of IT(DIT recognizes that some redundancy is necessary and beneficial to promote availability, reliability, and recovery of systems)*
- *Promoting data sharing between agencies and across IT platforms; improving interoperability and the potential for agency resource sharing*

In FY 2001, a Strategic Architecture Committee composed of DIT and technical and/or business representatives of County departments was formalized. Committee members selected had knowledge of contemporary information technology (IT) direction and the role IT plays in the vision or mission of their agency.

The purpose of the Architecture Committee is to address information technology (IT) architecture issues Countywide and to propose IT architectural

goals, standards and guidelines for consideration in implementing IT projects and initiatives throughout the County. In addition to assessing conformance of proposed solutions, the committee's review process provides an opportunity to emphasize the need for interoperability of systems and processes that cross agency or functional lines.

The Committee also works with County departments to ensure that participation and inclusion in decisions that affect the annual IT planning process. Responsibilities of the Committee include:

- Provide information technology architectural leadership to Fairfax County Government in supporting the on-going development of a strong, flexible, interoperable and secure technology environment.
- Ensure an integrated view between the County's architectural direction and technology initiatives and implementation plans.
- Work closely with DIT and other County IT groups to identify IT architectural issues related to business needs and IT projects, and propose approaches to address them.
- Propose IT architectural plans and standards to DIT, the DCE and the Senior IT Steering Committee for Countywide implementation.

In FY2005, a new organizational team was created within DIT to provide oversight of all County architecture and infrastructure standards, policies, and directions. The responsibilities of the **Architecture Review Board** include application development architecture, infrastructure and information architectures, security architecture, emerging technology, process and data modeling, integration and interoperability methodologies, technical standards, and SDLCS compliance. ARB's role is extremely important and valuable given the need to leverage solution platforms and processes across the enterprise and provides scalability, repeatable processes, and seamless interoperability for achieving cross agency business initiatives and county-wide initiative goals.

## 4.4 SYSTEMS DEVELOPMENT LIFE CYCLE STANDARDS (SDLCS)

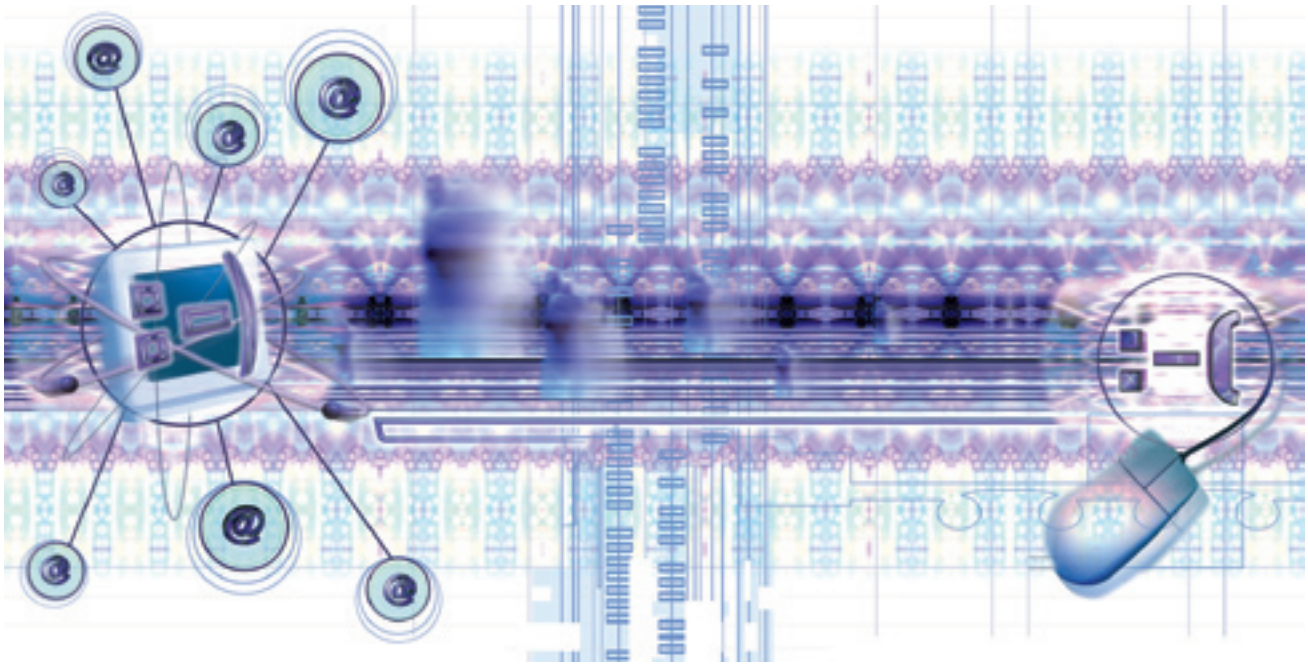
The County published Standards for documenting the development and implementation of applications. The original standards included written means of conveying information about the planned application, to allow for controls, performance, data integrity, appropriate infrastructure and operational procedures required to place the application into production.

As new technologies emerge and become part of the County's systems portfolio new application development techniques and application architectures using the newer and emerging technologies are required. These SDLC standards were enhanced in 2007 to include updates and additional components. As part of the document update, the SDLC will incorporate new development, wireless and interoperability standards, updated security standards, reviews for e-government and GIS, and requirements for Continuity of Operations (COOP) plan and related disaster recovery information as a requirement for deployment of any new system.

The Systems Development Life Cycle Standards form the basis for making the development of applications a consistent, repeatable process. The SDLCS provides a framework for application developers as to what are the important procedures and universal requirements necessary to complete an application. As an example, web applications must conform to Section 508 and ADA requirements, which enable the use of assistive technology such as screen readers for the blind.

The Standards apply to all applications developed for use by Fairfax County Government. These include, but are not limited to, enhancements on legacy applications, client server; WEB based applications, wireless technologies, communications systems and taxonomies. All staff and contractors developing and maintaining applications for County Government must comply with the Standards. In order to assist non-technical staff in using them, a glossary is included on the Web site.

A value implicit in the SDLCS is the importance of using the expertise of the project manager to select the appropriate outputs. While a minimum number of document deliverables are mandatory, the manager must select others appropriate to the individual project. Furthermore, SDLCS promotes accountability. The last phase of the Standards, the Evaluation Phase, includes a post-implementation review to ensure that the project has met its requirements and



lessons learned on how the application development standards can be improved. Periodically, selected IT projects are reviewed internally by DIT business and technical staff. In addition, the Fairfax County Internal Auditors will review randomly selected projects.

### Description of the Standards

The eight phases of the Fairfax County Systems Development Life Cycle are:

1. Preliminary Plan
2. Define Requirements
3. Design
4. Develop
5. Test
6. Implement
7. Support
8. Evaluate

Each phase contains multiple steps. Each step has one or more outputs. In the Design phase, for example, the step Design Technical Architecture has five outputs, two of which are: Check list for Technical Architecture Installation and Network Infrastructure Plan. The description of each deliverable document includes its purpose, content, recommended techniques and tools, and, where appropriate, a template or sample.

The first step in following the Systems Development Life Cycle Standards is for both the technical project manager and user project manager, to complete a check list selecting which outputs are relevant to their project. A core set of outputs is mandatory for the different types of development. For example, for Web development, project managers must complete the following:

- *Project management plan [Outputs 1.2.1, 2.6.1]*
- *Statement of scope [Outputs 1.2.2]*
- *User requirements [Outputs 2.7.1]*
- *A data model (if there is a database) {Outputs 2.3.1, 3.2.1]*
- *A process model [Outputs 2.1.1, 2.2.1, 3.1.1]*
- *And a test plan [Outputs 5.1.1]*

The project manager and Division Director approve the completed outputs. In addition to the eight phases described above, the Web site contains the Checklist and a Glossary of terms used in the Standards, and an Introduction. The Glossary facilitates the use of the Standards by the user staff involved in application development. The Introduction covers how to access and use this document. It includes: the purpose of the standards, what they are to be used for and how to use them, a suggested sequence for completion, recommended input documents and a sample of available commercial tools. The Introduction also contains

a checklist of all the outputs from which project managers will select those relevant to their project. Because of the variation of size, type and platforms of applications, the DIT and user agencies' Project Managers start the development of the application by selecting outputs applicable to that particular project. The selections are scrutinized and approved by both DIT and user agencies' management.

The standards can be found on the Fairfax County Web Site on the Department of Information Technology Main page at the following address: www.fairfaxcounty.gov/gov/dit/sdlcs.htm

The Systems Development Life Cycle Standards form the basis for making the development of applications in Fairfax County a consistent, repeatable process. The SDLCS provides a framework for application developers outlining the important procedures necessary to complete an application. Using SDLCS as a starting point, the Architecture and Planning team leads the effort to re-formulate a methodology on what procedures should be followed, and how they should be executed. The methodology will expand upon this. Each year, staff will go through a process of review and refinements to the SDLCS as necessitated by changes in technologies. Ensuring the quality of applications provides consistent and all encompassing standards that apply to all phases of application development. The Architecture and Planning team integrates the application development process standards, and the technology architectural standards that affect the development of systems including identification of standards that need to be updated and where new standards need to be developed.

## 4.5 IT PROJECT MANAGEMENT TRAINING PROGRAM

Managing an information technology project to successful completion on time and within budget is extremely challenging, even for experienced IT professionals. Successful completion of complex initiatives is dependent upon project managers possessing not only knowledge and understanding of the highly technical aspects of an IT project but also the skills associated with managing projects in a dynamic environment. An IT Project Manager specification (position series) is included within the County's personnel classification system.

During the late 1980's and early 1990's the County's internal audit office reviewed several information technology projects, and recommended that the County:

> *Establish a Countywide IT Project management-training program in consultation with IT Project Management professionals. Provide training to both DIT and agency personnel prior to undertaking extensive IT projects."* AND *"— establish industry approved guidelines for assignment to the role of IT project manager.*

This need was further highlighted in late 1996 in a consultant's report released on December 17, 1996 entitled, "Renewing Fairfax County: An Organization and Staffing Evaluation of Fairfax County Government." On March 7, 1997, the Acting County Executive's response to the Board of Supervisors about the study included:

> *(1) "The DIT will establish an Information Technology (IT) Project Manager training and certification program within 3 months —, with certification of a cadre of IT Project Managers within 6 months."* AND
>
> *(2) "DIT and agency personnel would not be assigned project management responsibilities until certification requirements have been completed. Curricula will include classroom and on-the-job training elements."*

In early 1997, the Department of Information Technology (DIT) reviewed other organizations' project management practices and conducted a survey of County information technology managers to determine the type of knowledge and skills needed to enable County staff to function effectively as project managers. Based upon the results of the review and survey, a County project management training program and the associated course content was designed and implemented.

In 2001, the County's IT Project Management (ITPM) training program was redesigned to include the project management core competencies outlined in the Project Management Institute's (PMI) body of knowledge (PMBOK). PMI is the recognized leader and

credentialing organization for project management professionals. Fairfax County's new ITPM training program has incorporated current industry approved ITPM practices to ensure sound high quality project outcomes. Additional enhancements are made each year as technology and best practices evolve. Additional focus has been placed in recent years on managing risks, IT security, organizational change management, and business process redesign.

The new and improved training program consists of ninety-six (96) hours (12days) delivered over the course of 8 weeks by County staff and a project management professional. The overall objective of the IT Project Management course is to provide IT project managers with a foundation in basic project management concepts, principles, and practices to effectively and efficiently manage IT projects.

The core content areas covered are:

- *IT Project Management Fundamentals*
- *Project Leadership and Communication*
- *IT Project Plan Development*
- *Microsoft Project*
- *Solutions Delivery Framework for Information Systems*
- *Project Budgeting and Cost Management*
- *Information Security, Risks and Controls*
- *Project Procurement and Contract Management*
- *Project Risk Management*
- *The Technology Delivery Process*
- *Business Process Redesign*
- *Information Systems Audit and Control*
- *Group Presentation & IT Systems Case Study*
- *Best Practices and Lessons Learned*

Training is provided to those individuals who are currently, or will soon be managing an information technology project. Staff are identified by their agency director and selected through a formal nomination process. The training program is currently institutionalized and is normally conducted once a year. Approximately two hundred and fifty (250) County of Fairfax and local government IT professionals have completed the program and met certification requirements.

The Fairfax County IT Project Management Certification is awarded to participants in recognition of full participation in the ITPM course. The County's certification is customized for its IT Project Management operations. Certification is based upon class participation and achievement of the course objectives. The project manager acquires a clearly defined set of core competencies related to ITPM by attending all IT project management classes in their entirety. This includes the successful completion of a hands-on Microsoft Project desktop training course. Certification in IT Project Management is the basic requirement for managing all levels of IT projects in Fairfax County. Once certified, an individual is given direct responsibility and authority for all phases of the project management process from initiation to closure. Support for applying project management methodology is available to new project managers who may benefit from mentoring.

Project management success is the completion of IT projects that are delivered to customers in the allocated time period, within the budgeted cost, and at the user's specified performance level. The use of effective project management skills is critical to the successful completion of IT projects. The County's IT Project Management training program provides the methodology for achieving high quality IT results utilizing County and contracted resources effectively and efficiently. Working with DIT, graduates of the IT Project Management Certification program have established a Project Management Forum to share information about on-going projects, experiences and ideas, and to refresh knowledge and assist making improvements to the Certification curriculum.

In FY 2006, DIT began developing and delivering a new series of one-day seminars to Fairfax County Project Management personnel. The ITPM Seminar Series, also known as the ITPM "refresher", provides the opportunity to offer follow-up training for those IT project managers that took the classes prior to 2001 and others as needed. The goals of this initiative are to hone existing project management skills, increase the likelihood that County projects will be completed within allotted time and cost constraints and improve each project manager's ability to identify and mitigate project risks. This series of independent, interactive seminars, allows 25 students per day to learn about and practice current project management techniques. Also, the brevity of each seminar allows the County to train a larger group of personnel by scheduling more than one seminar session per topic as demand may warrant; to offer seminars more

than once during the fiscal year; and to allow project managers the opportunity to "refresh" themselves in specific topic areas as needed. DIT has developed plans to develop a full curriculum of Seminar Series classes.

The first Seminar Series topic areas delivered were IT Project Integration and IT Project Communications. It is critical that IT project managers have tools available to move quickly to establish project guidelines, create initial project documents, and organize themselves and the project team for success. Because communication happens naturally between most project stakeholders, many Project Managers do not consider formal communications planning in developing an overall project plan. A hypothetical case study project is included as part of the new Seminar Series.

Program enhancements are planned for FY 2008 and Fy 2009 to provide new tools and techniques for managing projects that have enterprise-level impact, influence, or reliance. The County's increased focus on providing training and certification in the application of project management techniques to information technology projects is a critical and proactive effort directed at ensuring successful application of information technology to assist the County in meeting the needs of its citizens in the 21st Century and beyond.

# SECTION 5
## INFORMATION TECHNOLOGY ARCHITECTURE

# INFORMATION TECHNOLOGY ARCHITECTURE

## FEATURED IN THIS SECTION

# SECTION 5
# INFORMATION TECHNOLOGY ARCHITECTURE

## 5.1 ENTERPRISE ARCHITECTURE

This section identifies the current information technology architecture implemented in Fairfax County. The County's technology architecture is a strategic asset that defines technology components necessary to support business operations and the infrastructure required for implementing new technologies in response to the changing needs of government business. It is a multi-layered architecture that includes:

- Application and Data Architectures
- Platform Architecture
- Network Architecture
- Internet Architecture
- Security Architecture

## 5.2 IT ARCHITECTURE PROCESS MODEL

Fairfax County has adopted Enterprise Architecture (EA approach) as the blue print or roadmap by which specific technology solutions are developed. Architecture defines the manner in which technology is used to enable business solutions that are flexible, and allow expansion and change as requirements evolve or technology is updated or becomes obsolete. Architecture as a foundation and roadmap enables the County to assess the impact of new requirements and evolving technologies and allows for the incorporation of new technology as part of an updated blueprint that benefits other solutions. Enterprise Architecture improves the efficiency and effectiveness of technology investments by reducing redundancy, and promoting the sharing of knowledge and best practices across county government.

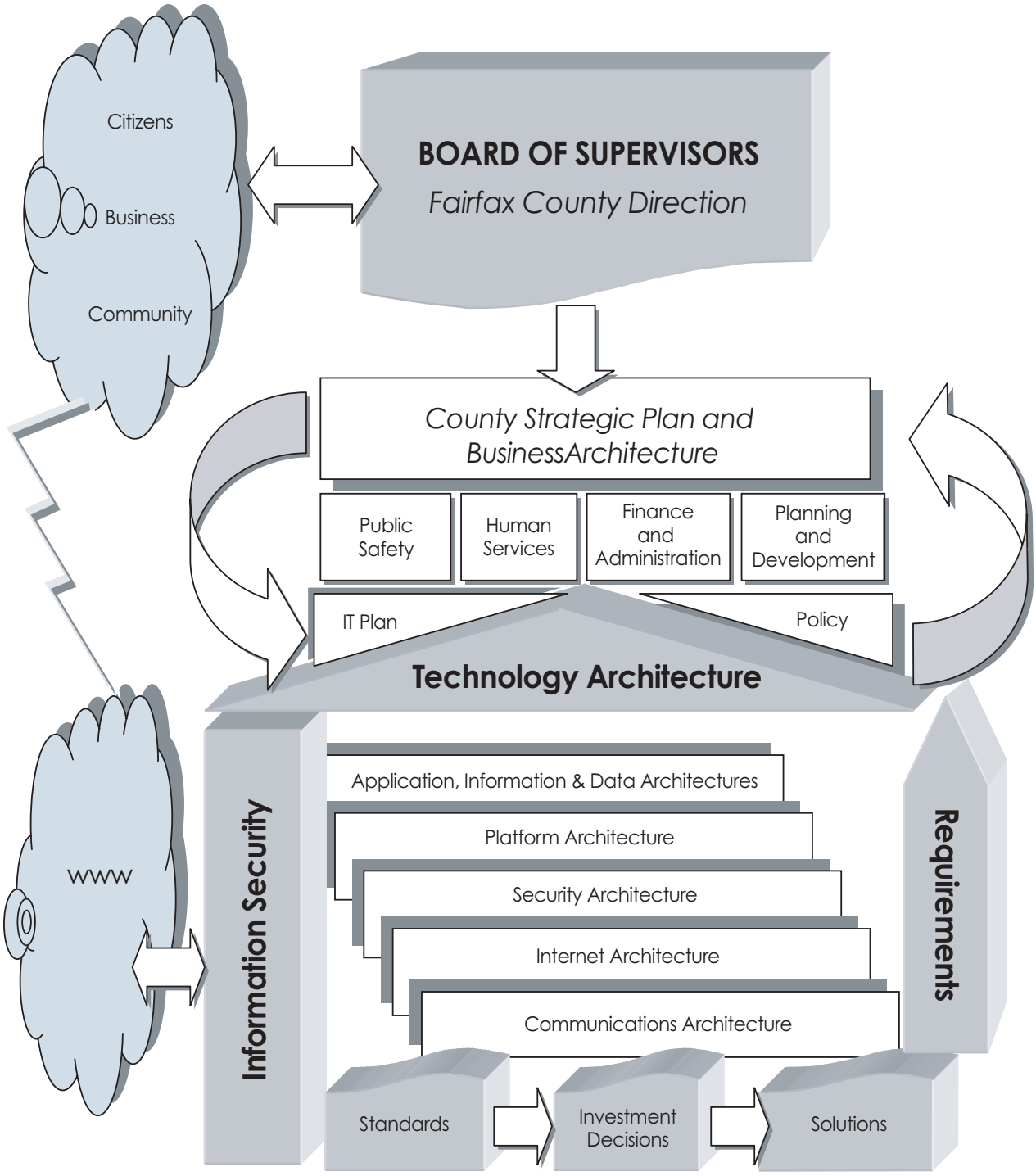
The Enterprise IT Architecture Process Model on the following page illustrates the inter-relationships between the County's IT and business architectures, and the iterative processes involved to ensure the development of an IT architecture that is efficient, cost-effective and business driven. For the purposes of the County's model, the business processes have been grouped into four major functional areas; Human Services (HS), Public Safety (PS), Planning and Development (PD), and Finance & Revenue (F&R), which reflect the compartmentalization of County services for delivery as well as evaluation purposes.

The model is based on the mission statement for Information Technology, specifically:

> *"Delivery of quality and innovative information technology solutions for agencies and those doing business with Fairfax County Government."*

This mission directs the County's information technology activities. Every effort undertaken is framed against this mission statement.

## ENTERPRISE IT ARCHITECTURE PROCESS MODEL



## 5.3 APPLICATION & DATA ARCHITECTURE

Application architecture defines the design and correlation among applications. Architecture promotes common development and presentation standards, enables optimum system integration, provides shared opportunities for storage and retrieval of data, facilitates the reuse of components, and the rapid deployment of applications in response to changing business requirements. Application Architecture includes elements of technology architecture that converts business process to business intelligence to support the County's goal of delivering timely, efficient and cost effective services. In Fairfax County a vast inventory of enterprise-wide and agency specific production applications reside on mainframe, server, and desktop computer platforms. New applications and application enhancements are constantly being evaluated, developed, acquired, and implemented as older "legacy" applications retire.

The County's goal is to use and create industry standard application development tools and language environments that are adaptive in client/server and Web-enabled models. Application architecture protects the County's investment in 'classic' systems by providing enhancements that facilitate enhanced user-friendliness, improved data manipulation, reporting, and end user controls. In addition, by keeping abreast of emerging technologies such as Web Services, XML, the County positions itself to take advantage of emerging opportunities offered by these technologies. An exhaustive discussion is beyond the scope of this section; however, some examples of the County's application architecture and some recent developments are described here.

As the County moves toward a balance between Commercial-Off-The-Shelf(COTS) vs. in-house development, there is a transition to a new framework for application development. The new framework incorporates Software Engineering, Information Architecture, and Application Development Methodology. These principles and techniques are used to augment the current Systems Development Life Cycle Standards (SDLCS). The resulting approach encompasses application life cycles from "cradle to grave"; that is, from the earliest stages of planning, through requirements and design, to implementation and post-implementation support. New applications will be built on the most current and promising platforms and an architectural framework based on the future of IT. While support for existing legacy systems will continue, a dramatic move is also underway to embrace new development platforms such as .Net and emerging standards such as XML and Web Services.

The .Net platform provides the foundation for the next generation of both departmental and enterprise-wide applications and offers a stable application environment with more opportunity for componentization of business logic, sharing of common components and the integration of business processes across application boundaries. A new class of tools such as Visual Studio.Net provides County developers with a robust and flexible development environment. Encapsulating both existing and new business logic into "Web services" provide the ability to expose business processes across organizational and application boundaries, within the County, other local jurisdictions, the state, the federal government, as well as business partners. XML provides the common "glue" to hold together and provide consistent information across boundaries to facilitate data sharing among disparate platforms and systems. Enterprise Application Integration (EAI) products such as WebMethods allows virtually unlimited ability to share, incorporate information and business process from older, mainframe and client/server applications into the new environment. With the ability to extend business processes further through the use of ASP code, the end product will be greater than the sum of the parts. A detailed "Architectural Framework" document has been developed, and is intended to be an organic document flexible enough to reflect and incorporate rapid advances in information technology.

**Office Systems —** Fairfax County uses the MS Office Suite installed on PCs attached to LAN-based servers, appliances and printers to facilitate shared file and printing requirements for word processing, spreadsheet, groupware presentation software, workflow database applications, project management and collaborative group work process and workflow. E-mail is MS Outlook on the desktop supported by Microsoft Exchange on an enterprise-class server.

**Production Applications —** Fairfax County is in the midst of overhauling and updating many of its administrative applications as well as acquiring new applications. Key applications in the midst of

development or further enhancement include the County's land development systems, tax systems, public safety systems, various human services systems, and human resources management systems. DIT maintains approximately 65 mainframe-based classic applications for Fairfax County agencies that support finance, purchasing, personnel, public safety, and planning and development of business operations. Most of these applications are modified package software, that run under CICS, using programming language architectures such as COBOL, SAS and EASYTRIEVE PLUS, with DB2, IDMS and VSAM databases. Efforts are underway to convert IDMS based applications to new technology. The current mainframe ('enterprise server') is an IBM 9672 with 3 terabytes of storage, running z/OS. Access to the mainframe systems is provided via the county's LAN by mainframe terminal emulation software on the desktop. The mainframe systems utilize text–based screens with user knowledge required of the application commands and function keys.

DIT deployed Web-enabled GUI front-end versions of several mainframe applications to facilitate easier access to system data. In addition, the classic COTS financial suite has been enhanced through the use WebMethods, the County's middleware EAI software tool which ties the two COTS together. The change created an integrated process for entering financial transactions through a modern, user friendly Windows interface. There are several projects underway to use EAI and Web-enable other corporate systems to build in web services, work flow and desktop reporting capabilities, meeting end user demands for GUI access to County business data. DIT also provides first tier support for over 100 server-based applications for agencies that provide Windows GUI access to a server resident database. Most of the server applications are "fat client" in nature with ORACLE or SQL as the primary database residing on UNIX and/or Windows servers. Some of these are being upgraded to web-based applications.

There are also "fat client" and web-based agency specific applications that are maintained separately by agency IT staff. The large majority of the small agency applications use Microsoft Access or Microsoft SQL Server as their database and programming language architecture. The IT standards call for complex, Internet accessible or high access databases to use Microsoft SQL Server, Oracle or DB2 as appropriate. Most agency server-based systems reside on Windows 2003 servers that support both applications and file and print server-sharing requirements.

**Geographical Information System Applications (GIS) —** GIS is a specialized system for storing, retrieving and analyzing an array of digitized map layers that collectively record the topographic, demographic and other features of every location in the County. GIS can be used to identify the shortest route from one location to another, generate school bus and sanitation truck routes, locate sewer lines and other utilities, plan development and many other useful tasks. Our system currently has over 200 layers of GIS data. The County continues to develop its GIS data and implement new applications in support of agency functions. GIS is supported on the UNIX platform.

## 5.3.1 The Application Tools

Application tools are the information technology components used to develop and support application functions.. Application tools include the support systems required to facilitate work planning and communications.

**Programming/Development Tools —** New applications are currently under development using fourth generation object oriented languages and tools. This approach will continue as additional client/server applications are developed and as Commercial-Off-The-Shelf (COTS) system components are purchased. Standard life-cycle methodologies are employed to define, develop and implement new systems. The models, design, and documents created are updated throughout the system development and maintenance life cycle. In specific instances, expert system technology is used to incorporate complex rule based functionality into systems. Third and fourth generation languages and tools are used in only a few specific development efforts and as utility programs on the mainframe tier of some client/server systems. New developments use ASP and ASP.NET and *Dreamweaver* for the presentation layer. The County uses webMethods, a suite of tools to assist in the integration of applications at the presentation, business logic, and data layers. Documentum is the County's enterprise content and document management software solution. The County also supports REAMS imaging solution. Software Engineering technologies are being incorporated into the Systems Development Life Cycle Standards (SDLCS) to provide a disciplined and consistent development approach.

**Database Management Systems (DBMS) —** The County uses several database management systems to support its business applications. Mainframe classic and legacy applications use DB2, IDMS, and/or VSAM databases. DB2 is the preferred database solution for new mainframe hosted applications. For UNIX or Windows platforms, Oracle and Microsoft SQL Server are the County's database standards. Oracle Gateway, Neon's Shadow Direct, and webMethods are used to enable access of mainframe DB2 databases. Relational database design activities, such as developing entity-relationship diagrams, data dictionaries, process models, logical and physical data models, and database definition languages, are supported through the COOL: BIZ and ER/WIN tools.

**Departmental Reporting —** Business Objects/Crystal Reports, SAS, QMF, SQL Reporting Services and Easytrieve Plus are the current tools supported for basic ad-hoc query and departmental reporting.

**Enterprise Decision Support Systems and Business Intelligence —** The County's portfolio currently contains over 20 different products used for reporting, analytics, and decision support. Many of these products were brought into the environment through purchase of a COTS solution with embedded tools. As a result, the County's business intelligence capability is built on department-class rather than enterprise-class technology. The proliferation of tools and the associated support, training, and infrastructure costs present a strong business case for rationalizing the portfolio. The County's strategy in this regard is to provide shared enterprise capability and infrastructure for decision support. To that end, the County is currently assessing a variety of platform solutions including SAS, Business Objects, and others that could facilitate the consolidation of isolated point solutions. As standards are defined for the County's enterprise solution(s), the portfolio will be rationalized into fewer products over time. This approach will enable DIT to upgrade and modernize the existing portfolio while creating economies of scale for improved support and cost control.

**Office Automation/Workstation Software —** The County has adopted Microsoft Office Suite for general productivity automation tools including Word for word processing, Excel for spreadsheets, PowerPoint for presentations, Access for desktop application databases, Exchange/Outlook for e-mail/groupware, and Internet Explorer for Web browsing. Other desktop software includes Microsoft Project for project management/tracking, VISIO, and Symantec Antivirus. Agencies may have other desktop based software for special requirements.

**GroupWare/Collaborative Software —** The County uses Group Systems as its primary collaborative group software in the Group Decision Support Center. Groups use the computer-supported meeting center and its software to conduct process improvements, strategic planning, program evaluation, and vendor selection sessions. Other software is used to support activities dealing with the group output/results, e.g., Microsoft Exchange, Word, Excel, databases, presentation and process modeling software.

**GIS Software —** The ARC/INFO software provides high-end workstation tools and functionality to the GIS analyst. The software integrates visual or graphic data in the form of maps, with descriptive or attribute information from an organization's internal databases. ARC/INFO provides the tools for analysts

to access, visualize, and query both graphic and tabular data for better analysis and decision-making. Additionally, ArcView GIS provides mid-range desktop GIS tools to the skilled-user for map creation and analysis of the County's geographic data sets. And finally, MapObjects and the Internet Map Server provide a method for distributing highly customized GIS based applications through the Internet /Intranet.

**IT Service Desk software —** The IT Service Desk provides County employees a centralized point of contact for computer support. InfraEnterprise is the WEB based solution used to support the Service Desk function using the ITIL framework. The Automatic Call Distribution telephone system is used to route calls. The Service Desk also uses diagnostic tools such as Microsoft Technet, the InfraEnterprise Knowledge Bank, and technical documentation for resolution of incidents involving key systems supported by DIT in the IT inventory. The IT Service Desk has a high percentage rate of first-call resolution.

## 5.4 PLATFORM ARCHITECTURE

Platform architecture defines the technical components of the infrastructure including server and client platforms, the operating systems and interfaces supported, as well as other software tools and equipment used to operate the applications. Fairfax County's platform architecture includes over 600 servers: z/OS mainframe, UNIX (IBM AIX, Sun Solaris and Unisys ES) and Microsoft Windows 2003. Over 12,000 PC's provide end-user access to County systems. Laptops, Blackberries and other PDAs and hand-held devices also support employee access to Agency business systems.

All Personal computers are standardized using Windows XP Service Pack 2 and the Microsoft Office 2003 to support office automation requirements. VISTA is being rolled out in a few agencies with a careful full deployment strategy. Total server storage requirements have grown from 394 gigabytes in 1998 to the current total of over 300 terabytes. The County also uses state and other non-County hardware platforms as necessary. The following paragraphs describe the major features of the County's platform architecture.

### 5.4.1 The Platforms

**Desktop PCs, Workstations and Peripherals —** DIT prescribes hardware platforms and desktop applications standards as well as procurement vehicles to optimize support and costs. Desktop computers (PCs) are replaced in accordance with the County's four-year PC Replacement Program cycle using adopted standards bundled with the MS Suite. THe PC Replcement strategy applies to all agencies and provides the County economies of scale as well as a more robust, effective support environment.

The current desktop computer platform standard consists of Pentium 4 and above processors running the Microsoft Windows XP Service Pack 2 operating system. County PCs are used for office productivity software, enterprise e-mail and groupware, application client software, Internet/Web access, and mainframe emulation. Office configuration standards are depicted in the diagram on the next page followed by a table listing all County IT Standards for desktops and servers. The next wave of PC replacements to be deployed is Windows XP Service Pack 2 and some Windows Vista. This will be approximately one-fourth of the installed base. Vista and MS Mobile Web will be evaluated for the next deployment enhancement.

Desktop and network printing is accomplished through a large inventory of stand-alone and network printers and appliances. Agencies use a variety of laser-jet type desktop and high speed LAN based printers in offices. In 2003, the county's copier inventory became an enterprise multi-function copier/printer/scan/fax machine asset. In FY 2005, this program was moved to the Department of Information Technology and incorporated into an enterprise printing solution strategy. DIT incorporated the County fleet of over 500 network attached multi-function multi-user machines, and 1500 workgroup based local printers.

**LAN-based Network Servers —** Fairfax County LAN server environment utilizes Microsoft Active Directory services as a standard for directory services, authen-

tication and authorization, which are essential components of the Microsoft Windows 2003 architecture. However, the County still supports Microsoft Windows 2000 Server for required legacy applications. In addition to the current Windows 2003 servers the County also supports UNIX servers that are used for those large agency specific applications and enterprise infrastructure applications that require a more robust server platform. SUN is the preferred UNIX server; however, the IBM p-Series is still supported. The County supports virtualization as a standard platform for LOB and infrastructure applications where feasible. Enterprise-class Intel-based server technology (e.g. UniSys ES 7000, DELL/IBM Blade servers) supports some of the County's enterprise infrastructure applications such as Exchange, SQL, Citrix, etc.

CITRIX Presentation Servers are used for many of the business applications that require "thin-client" technology to minimize Wide Area Network traffic, optimize the efficiency of fat client-server applications, and streamline desktop PC support activities. CITRIX also support secure access for remote access users and telework. Details on managed LAN-based servers:

| Mid range Platform | Number of Servers |
|---|---|
| AIX | 12 |
| W2K3/W2K | 700 |
| Solaris | 25 |
| Unisys | 6 |

**Mainframe (Enterprise Server)** – Fairfax County supports its major business and legacy applications on an IBM mainframe running the z/OS operating system. It is partitioned into logical machines, serving over 20,000 agency and schools users at over 200 locations.

| Device | Machine |
|---|---|
| Mainframe Computer | IBM zSeries, Z890 Model 240<br>8GB Real Storage |
| Tape Subsystem | IBM 3494 Automated Tape Library<br>IBM 3590E Drives<br>IBM 3480 (cartridge) |
| Printers | IBM 4100 Laser<br>IBM 3900 Laser<br>IBM 6400 Line Matrix |

## 5.4.2 Storage Area Network

In FY 2002, Fairfax County implemented its first Storage Area Network (SAN). This enabled data to be stored in a centralized location, with redundancy and failover, mitigating the risk of data loss due to hardware failure. Data from all servers (mainframe, UNIX, Solaris and INTEL) could now coexist on the same disk subsystem. In 2006, the County refreshed the enterprise disk arrays and fabric with EMC DMX-3 disks and Cisco fabric. The refresh positions the County for future growth and to meet the strategic initiatives for Data Lifecycle Management.

Storage Management requirements addressed by the SAN are:

- Scaleable storage capacity that allows users to increase their storage as needed.
- Modular, adaptive architectures which allows users to deploy storage in a variety of centralized and distributed environments with re-deployment capabilities as needed.
- Highly available architectures to prevent downtime.
- Cross-platform solutions that support a variety of operating systems, allowing users to reduce costs by standardizing on a single enterprise storage solution, rather than operating system specific solutions.
- Higher levels of performance to support the ever-growing volume of online data.
- Higher performance backup and restore operations to support shrinking backup windows.
- The ability to share data across the enterprise rather than building "islands of data."
- Easy to use, centralized management tools that allow hardware and data to be "distributed."

Storage Area Network Details:

| Device | Machine |
|---|---|
| Disk Subsystem- Intel & Unix | EMC DMX3<br>EMC CX500, CX3-80 |
| MS Exchange environment | EMC CX700 |
| Tape Subsystem | IBM 3494 Automated Tape Library<br>IBM 3590E Drives<br>Spectra Logic 64K Tape Library<br>SpectaLogic 20K |

## 5.5 NETWORK ARCHITECTURE

The County's communications infrastructure includes voice and data technologies and the various topologies, transmission services and protocols necessary to facilitate the interconnection of server platforms, intra-building and office networks (LANs), and inter-building and campus networks (WANs). The County's voice and data networks continue to grow, in terms of cost, sophistication, and increased demand on the County's communication staff.

The Communication Group in DIT supports over 12,500 data ports and over 15,000 voice ports. Additionally, initiatives already in place and those planned have resulted in many significant changes with many more occurring in the future. The Gartner Research Group and others now document that network technologies refresh every 18-24 months. This will provide more challenges for County fiscal and staff resources, as the County strives to keep network standards in line with evolving business requirements, security and other support needs. The communications plan strives to take into account growth, based on the needs of County agencies as programs expand, which in turn require new or expanded network resources to provide both intra and inter County links. The Internet and Web-enabled applications have rapidly expanded. This expansion and the need for business continuity required the expansion from a single high capacity DS3 to two full 45 Mbps circuits connected to two separate ISPs. Future initiatives and technologies, such as e-Government applications, streaming video, teleconferencing, and more integrated and complex applications drive the requirements for the County's communication infrastructure and its components, thus the requirement to update and/or enhance annually. During FY 2004 the County replaced its Wide Area Frame Relay network with a new ATM logically meshed network. The desire for increased network security has resulted in the County employing Network Address Translation (NAT) to add another security layer to protect its Enterprise Network.

The goal is to provide a network that is responsive and reliable for the user and the user's application and allows for the uninterrupted flow of voice, data, and video information. To this end, the County is working on several projects that will boost and consolidate the underlying physical infrastructure supporting voice, data, and video, while at the same time providing increased, cost-effective bandwidth potential, and improved output. The best opportunity recognized is through the implementation of the I-NET, a metropolitan fiber ring that connects over 400 County and Schools facilities. The County views a strong, viable communications infrastructure as a vital component in the overall IT strategy toward maintaining its success in deploying cost-effective solutions that optimizes its business goals, and maintains its reputation as a leader in technology.

### 5.5.1 Enterprise Data Communications Network

The Enterprise Data Communications Network for Fairfax County Government serves as the data communications backbone that provides countywide access to information technology resources. Operated by the Department of Information Technology Infrastructure Division, the Enterprise Data Network connects approximately 14,000 computer devices in over 300 locations. These computer devices include personal computers, printers, network servers, communications equipment (routers and switches), modems, UNIX workstations and servers, mini-computers, and the mainframe computer. Additionally,

various wireless technologies are rapidly expanding throughout the County's network. The County began a project utilizing commercial broadband wireless infrastructure to support wireless applications, data, images, and live video to the field and mobile devices supporting primarily public safety responders and evolving for other key business areas.

All supported network systems are based upon open standards, and compliance with published standards is required for any network-connected device or system. The County standard network protocol is TCP/IP. Gigabit Ethernet is the standard backbone speed in the County and 100MBPS is the standard desktop speed.

The Enterprise Wide Area Network (WAN) is built of two different architectures. One: I-Net or Institutional Network utilizing the dark fiber provided to the County through the COX and Comcast Cable Franchise Agreements. I-Net spans seven hub sites and two key resource centers, Massey Public Safety Campus and the Government Center. These sites are networked via a 10 gigabit DWDM fiber optic backbone. The I-Net DWDM backbone provides connectivity to 180+ remote sites running a 1 gigabit uplink from the backbone to the site. I-Net also employs MPLS (Multiprotocol Label Switching) to allow I-Net to service many types of diverse traffic whether it is enterprise, public access, or voice over IP. Through MPLS each type of traffic can be separated logically for security support, as in enterprise vs. public access, or prioritized in the case of voice traffic. I-Net has now positioned the County Data Communications Network to respond quickly to the ever-changing technology needs of its customers. The remaining WAN sites are supported via Verizon ATM and TLS services.

The County also utilizes both ISDN and DSL technologies for small sites such as group homes and park maintenance shops. The decision to use these technologies is based on staff size and data requirements of the staff. Use of the ISDN technology is being phased out in favor of I-Net, ATM, of DSL.

The creation of a Public Access Network in FY 2005 was an addition to the Enterprise Wide Area Network (WAN) Architecture. This network provides public access computers to the citizens of Fairfax County providing them access to County and Internet resources while protecting Fairfax County's Enterprise Network. The Public Access Network includes all public libraries and community and recreation services sites. The design provides for separate physical networks at each site while sharing the existing WAN infrastructure and using logical separation on the WAN. A firewall between the Enterprise Network and Public Access Network allows for County IT staff to manage the infrastructure down to the desktop for each site. This model will be the standard for any new facilities requiring both enterprise and public access.

The County will continue to implement wireless LANs and wireless data over commercial systems, when this technology makes good business sense. The County carefully evaluates the use of this technology to ensure all County data is protected from unauthorized access. Currently, non-broadcast SSID's, MAC address registration, and digital certificates are required to gain access to the private WLAN. VPN technology is employed to protect data over commercial services.

Network Management is currently supported on four platforms:

1. CISCO Works 2000 — Monitors all Cisco installed equipment.
2. Orion Solarwinds — Monitors I-Net infrastructure for up/down alerting and performance issues.
3. Verizon Managed Services — provides fault reporting of all ATM sites.

Currently, mainframe connectivity is achieved through two primary gateways. First, a Cisco router using CIP (Channel Interface Processor), connects directly to the IBM Mainframe through a fiber-optic channel and supports a majority of the TN3270 (Telnet) sessions to the mainframe; second, an IBM 3745 Front End Processor is used to support the legacy SNA network sessions. The 3745 is being replaced during FY 2008 by moving this type connectivity directly onto the new Mainframe over native Ethernet, a capability not previously available.

The County has implemented a 'SAFE' architecture dividing our perimeter into five business groups E-Commerce, Internet Access, Partners, Emergency Operations, and Public Access. Each group has its own physical firewall tailored for that specific business area. The E-Commerce business group supports all public facing web services providing access to county resources for both citizens and businesses. The Internet business group is used to control county employee access to the internet and allow for content and virus scanning. The Partners business group

allows for connections to external "Trusted Partners" to include Fairfax County Public Schools, Fairfax County Water Authority, Commonwealth of Virginia (State Police, State Health, Department of Social Services, Supreme Court, Department of Juvenile Justice, and State Board of Elections) as well as public safety connections for several adjoining jurisdictions. The Emergency Operations group was setup to secure the Emergency Operations Center providing IT resources to the Department of Emergency Operations. The final group Public Access was established to secure the Public Access network built for the Libraries and Community and Recreation Services. By doing so the County has increased firewall performance and limited exposure to each business group.

Remote access via dial-up, VPN, and Citrix services provides access to the County's Enterprise Network resources for telecommuters, vendors, remote access users, or business travelers, as well as several small Fairfax County offices. Security for remote access is managed through a Remote Access Server using security tokens and PIN numbers.

## 5.5.2 Institutional Network (I-Net)

Over the past year the County has designed and implemented a new network (I-Net) utilizing dark fiber provided to the County through the Cable Franchise Agreements with COX Communications Northern Virginia and Comcast of Virginia.

Fairfax County's I-Net is one of the largest and most complex local government networks in operation. This carrier-class network comprises of over 4,000 km of single mode fiber (SMF), in a ring, hub and spoke topology. There are seven Hubsites that are redundantly connected in a ring.

The I-Net is one of the most viable, cost-effective and technologically advanced solution that the County has experienced since computers first appeared in the County's technology inventory. The fiber optic infrastructure enables the County capabilities to transport data, voice and video. Through the I-Net the County will reach its ultimate goal of converged voice, data and video technologies. The I-Net can provide services such as high speed data, Voice over IP (VoIP), broadcast video, video conferencing, streaming video, and distance learning. The network has several origination points, and facilities for controlling the switching and routing of data, voice and video signals among all participating sites.

Although broadband service is available through local telecommunication companies, it comes at a significant price, a loss of flexibility, and for some services, only limited availability. The I-Net provides bandwidth that is virtually "unlimited" while meeting the County's present and future communication requirements. The I-Net is becoming the "super highway" for the County's internal video, voice and data communications. The virtually "unlimited" bandwidth provided by the I-Net allows the County to amortize its cost over the life of the I-Net with an overall long-term operating cost savings.

### I-Net Voice/Data Service

See sections 5.5.1 and 5.5.3 for detailed information.

### I-Net Video Network

The Video Network is a scalable integrated video transport system. The Video Network provides a high quality image delivery system with scalable bandwidth, capacity, and growth potential for future Fairfax County Government and Fairfax County Public School applications. The Video Network provides video services to over 400 Fairfax County Government and Fairfax County Public School facilities.

The I-Net video network transport has two distinct communication links. Coarse Wave Division Multiplexing (CWDM) is the transport technology to provide forward and reverse transport for I-Net enabled County facilities.

The forward (downstream) transport provides select cable TV operator channels and local origination content produced by the Video Production facilities for services such as distance learning. Each I-Net enabled facility is equipped to transmit reverse (upstream) video to the County's video production facility for processing.

## 5.5.3 Voice Communications Network

The County's Voice Communications Network provides voice communications services to all Fairfax County Government agencies, as well as various affiliates via County-owned systems located in buildings throughout the County, connected via telephone company lines and several direct County-owned connections serving several campus locations. Voice communications services are managed centrally through the network, supporting local and long-distance calling, call centers, IVR (Interactive Voice Response) systems, voice mail, conference bridge and audio-video teleconferencing, hot-lines and special '800' numbers for specific programs, industrial systems monitoring devices, and residential services for County-operated group homes and apartments. Management and voice communication support are also provided for the primary and backup '911' communications centers. In addition cell phones are centrally managed.

The total environment includes approximately 400 sites, comprised of two major campus environments, several large Human Services centers, Parks, Libraries, Police, Fire and Rescue stations, "911" Centers, Public Health Centers, etc. Additionally, there are lines to over 300 water, sewage and HVAC systems end points, as well as links to various agencies of the Commonwealth of Virginia and other local jurisdictions.

DIT supports over 20,000 phones, until the completion of the Telecommunications Modernization project which spans several fiscal cycles, uses a combination of CPE platforms. During an average month the County places over 1.3 million calls excluding intra-building calls. Below is a brief, but by no means complete, summary of the current County's voice communications infrastructure (much of the assets detailed below will be replaced by the Telecommunications Modernization Project).

The main government centers and large buildings are serviced by Siemens PBXs and Nortel Meridian Option 61C PBX systems; all having integrated voice-mail systems. Fairfax County's main Government Center's voice traffic is served with a four-node legacy Siemens 9751-70 and the County's Public Safety Center located at the Massey campus with a two-node Siemens 9751-70. These systems, as well as several other large building systems are interconnected via DS1 tie lines, which reduce some of the message unit charges from Verizon. **This will be replaced with the new enterprise Avaya platform during fiscal year 2009 (see below).** An IP-enabled Nortel PBX is located at the South County Government Center which also supports an office two miles away via a remote shelf. About 10% of the telephones are IP sets.

A Nortel Networks Succession 1000M has been installed at the Health Department's Kelly Square location. This IP enabled PBX not only gave the department advanced capabilities, but it also took a significant resource load off the Massey PBX. This system was implemented several years ago, prior to the enterprise project. Voice communications to our smaller remote sites, including Libraries, Parks, Public Health Centers, etc., are served by various Toshiba systems and Siemens "Redwood" systems, all with integrated voicemail and Mitel SX-200.

A Nortel PBX is located at the PSCC (Public Safety Communications Center) for emergency calls, while administrative calls at this location are processed by a Nortel Succession 1000 PBX. The 911 Center will receive new equipment as part of their move into the new Public Safety Transportation Operations Center (PSTOC).

Police and Fire and Rescue stations – are on a Public Safety Voice network which is independent of the other county agencies. These are being upgraded to Nortel BCMs and are networked to a Succession 1000M configured as a Network Gateway Controller which will be integrated with the Health Department sites. This will allow Public Health and Public Safety personnel, located in different buildings across the County, to be integrated into a contiguous "First Responders" telephone network.

Other platforms include a ninety-six (96) port computerized conference bridge is located at the PSCC for predominately Police and Fire and Rescue operations. This conference bridge is provided by Octave, and is expandable to 192 ports; voice needs of our very small offices, i.e., small Human Services and community services sites are supported by carrier provided POTS service and single-line analog sets (some of these will be converted to IP phones off the enterprise system project). Various agencies also use centralized IVR services with connectivity provided via Verizon T-1 and numerous channel banks at distant sites. These services have greatly improved Fairfax County government's ability to provide quality services to its citizens and business clientele.

The County's VDS systems used to capture ACD historical statistics has been replaced with new hardware and a new application which provides Call Center statistics and metrics. This capability will eventually be replaced as a part of the Voice Modernization Project, but greatly improves the necessary statistics used by our Call Center managers to evaluate the County's response to County citizens.

The County is implementing a new Telecommunications Management System — Anchor Point which will significantly improve the management of the County's telephony systems and dramatically improve inventory, work order, and billing processes.

The convergence of voice, data and video traffic into a single network is the ultimate goal for the County's communication architecture (see section under Network Communications and I-Net). The County developed a strategic plan for replacing the disparate systems with an enterprise-wide voice communications solution. Implementation of the new voice solution is in its second year. The solution will use the latest technology that includes VOIP and will use the I-Net (fiber-optic network) as the backbone network that connects County facilities, to ultimately lower the County's circuit costs. A framework for a strategic direction to evolve the Counties communications capabilities and services was developed during an FY 2002 comprehensive study of the telecommunications architecture, including support issues, unique applications, and opportunities made available through the I-Net. FY 2006 saw the expansion of this strategic plan into a Request for Proposal (RFP) for the design, engineering, and implementation of a new County-wide voice platform. These plans and programs will help the County to meet the telephony needs and requirements of our citizens and employees. Eventually leveraging the high speed — high bandwidth connectivity provided by the County's fiber-optic network — I-Net, Fairfax County will have a fully integrated video, data and telephony Enterprise.

In FY 2007, the County began implementation of a new telephone architecture with and enterprise-wide VOIP capable system. This project will eliminate the diverse network of disparate legacy telephone systems with a contemporary telecommunications solution that will send call traffic over the County's I-Net infrastructure and integrate with the county's messaging platforms and IP based telephony applications. This effort will span several fiscal cycles.

## 5.5.4 Emergency Communications Network

The emergency communications networks that the County maintains are divided into two categories: Public Safety Radio Network and Public Service Radio Network.

### Public Safety Radio Network

**Voice Network —** The County operates a digital, 800MHz trunked voice radio system that supports the operations of the Police, Fire and Rescue, and Sheriff's Departments, with more than 3,000 mobile and portable radios. This system infrastructure is also utilized by the County's Public Schools Security Department, and by the independent police department of the City of Fairfax, and the Towns of Herndon and Vienna. Equipment is located at eleven locations throughout the county, and all sites are linked together by a redundant VERIZON SONET network. The system provides for voice interoperability with and between the public safety agencies of Arlington County, City of Alexandria, Metropolitan Washington Airports Authority as well as the District of Columbia Fire department.

**Mobile Data Network —** To support operations of the various public safety agencies, the County operates a 450MHz mobile data communications system (MDCS) that ties the response vehicles of the Police, Fire and Rescue and Sheriff's departments to the County's Computer-Aided Dispatch (CAD) system, as well as access to various databases maintained by the Commonwealth of Virginia and the Federal Bureau of Investigation. This system consists of more than 900 Mobile Computer Terminals (MCT) and Vehicular Radio Modems (VRM) in vehicles of the various agencies, with transmitting equipment located at six sites in the County.

### Public Service Radio Network

The County operates a second 800 MHz trunked radio system that supports more than 3,000 radios for the Department of Public works and Environmental Services, Public Schools Transportation (school buses), Park authority, FASTRAN, the CONNECTOR bus system, and other non-public safety County agencies. This seven-site system replaced a 1980s-era system that had limited coverage and performance in 2005.

Continuing in FY 2009, the County will remain fully involved in the FCC mandated 800MHz re-banding effort. This project is challenged by the need to do this while maintaining regional radio interoperability.

## 5.6 INTERNET ARCHITECTURE

The Fairfax County Internet architecture supports the County's E-Government program providing significant and wide-ranging opportunities to utilize emerging technology as a means of making information more readily available to County staff, citizens, and businesses. In addition, the interactive nature of the technology allows residents and others to conduct business (e.g., pay taxes, apply for permits, etc.) with the County at their convenience and from their location. Likewise, Internet technology allows access to enterprise data (real estate assessments, Human Services resource database, etc) without the need for a resident to call or visit the County Government center complex.

The e-Government architecture defines the standards, technologies and guidelines for public access, and conducting electronic business among County agencies, state agencies and outside entities. The County's Internet architecture is comprised of the following:

- **High Speed Connection to the Internet —** The County's fractional DS-3 connections to the Internet provides access to the Internet for County staff as well as outside access to the County's Web server(s) by residents, business, and others via the Internet.
- **Public Access Web Server —** The County's Public Access Web Server provides Internet users with a vast amount of information made available by various agencies within the County. The Web server can be viewed as an "on-line service counter" where residents and others may obtain information related to services, licenses, taxes, recreation, court filings, and so on. The Web server also acts as the distribution or collection point for information obtained from or provided to enterprise databases via an "Application Server."
- **Intranet Web Server —** The County InfoWeb Intranet Web server provides a portal access to County information and applications for agency and employee use.
- **Application Servers —** provide the gateway between the County Web servers and the information stored in County enterprise databases. The application servers do the work of communicating with various databases on the County mainframe and other platforms, accessing and collecting the requested information, formatting the information, updating the database where appropriate, and returning the result to the Web server for dissemination to the requestor. Application servers also provide additional levels of security to ensure that only allowable information is accessible.
- **The WebBoard Server(s) —** provide a mechanism for visitors to the County site to engage in ongoing discussions in either "real time" chat or, more commonly, by use of a localized version of Internet "newsgroup-style" discussion forums. These forums provide residents the opportunity to discuss a range of topics among themselves as well as with County officials and staff.
- **Interfaces —** between the County Application servers and the enterprise databases provide the link that allows access to data residing in a wide array of sources. The interfaces make it possible to access data from virtually all of the County databases: DB2, Oracle, SQL, MS Access and VSAM. The interfaces are comprised of "Application Program Interfaces" (APIs), Open DataBase Connectivity (ODBC), SOA, and other standards that enable the access layer of the web architecture.

## 5.7 SECURITY ARCHITECTURE

The Information Security Office defines the security standards and policies necessary to protect the information assets of the County. The security layer employs security principles coupled with a hardware and software infrastructure supported with applicable policies, plans and procedures. This architecture is designed to provide an appropriate level of protection for all County information processing resources regardless of platform and includes incorporation of industry best practices for overall reduction of risk.

The objectives of the information security program are to ensure confidentiality of information, integrity of data, systems and operations, technical compliance for HIPAA and PCI, privacy and to ensure availability of information processing resources. The information security program utilizes a multi-faceted approach to meet these objectives that includes research and implementation of threat reduction techniques, technological and managerial solutions when possible as well as implementation of awareness raising activities. The basic elements of identification and authentication, access control and monitoring of information processing activities are employed throughout the enterprise.

In view of the dynamic environment of information technology, the security architecture continues to evolve to meet the challenges arising with new technologies necessary to conduct e-Government activities. Identification and authentication, access control, and auditing functions are performed on the specific platforms using the capabilities inherent in the appropriate operating system. Policies, standards, software, hardware and processes are continually evaluated to modernize the infrastructure to permit the County to participate in e-Government activities while still providing secure access to County resources. Fairfax County has implemented a network architecture that takes a greater defense-in-depth approach to network security design.

Firewall technology is used as the main perimeter defense with all access from the Internet routed through the County's system of firewalls. In addition, the County uses broad filtering and routing at the firewall portion nearest the Internet connectivity, while more granular filtering and routing is exercised nearest the internal network connection. Classic authentication for each internal user is based upon a unique UserID (also called a sign-on or log-on) combined with a unique password. To improve the secure access and authentication to web-based applications as well as backend servers, the County has procured products to provide a solution that resolves today's security issues and positions DIT to leverage this investment and framework in the future. eTrust, through its SiteMinder module, provides a software platform of shared services that includes reduced sign-on, authentication management (who are you), and entitlement management (what you are allowed to do on the site) for web-based applications. eTrust also provides a secure reverse proxy solution that passes requests to enterprise backend content servers, and returns resources to the requesting client, thus allowing for a practical solution to the protection of internal assets. With Identity Management also being put in place, the County will be in a position to manage user profiles for both internal staff and public access, making personalized e-Government a reality. eTrust will continue to be expanded to provide a secure access and end-user authentication platform for internal and external users.

The County's network employs a private/public network model. Sensitive and critical assets are located on the private portion of the network while information and services available for public use are located on the public section. DIT will continue implementation of modularized, multiple firewalls supporting a variety of specialized application requirements. The County provides Dial-Up, VPN and Web Access technologies for remote users. Each of these requires security tokens and LDAP authentication for access. Remote access is approved at the same level as if the user were physically at his or her work site. Remote access is granted to those individuals who are approved telecommuters, users who periodically need to access County Systems from home or other locations, and individuals who need access while traveling. To enable the county to further realize return on investments made in remote access technology, the remote access program is being expanded to accommodate continuity of operations planning.

The County has implemented an Intrusion Detection System (IDS) to detect intrusions within the network and is in the planning stages of implementing an Intrusion Prevention System (IPS). IPS differs from IDS in their function of prevention versus detection. IPS devices are able to detect signs of an intrusion


or an intrusion attempt and pro-actively prevent it from happening. IPS provides capacity to perform real-time analysis of Intrusion attempts to determine if sensitive data, systems or network devices are being attacked or if a breach in confidentiality, integrity, or availability has occurred. The primary objective of Intrusion Prevention is to reduce possible damage and isolate /contain the malicious traffic. With the large quantities of log and alarm data generated by firewalls and sensors, the need for a specialized application to support the role of correlation was chosen and is in place. The IPS solution conducts a comprehensive threat assessment and allows for quick identification of credible threats to the organization in order to facilitate expedited response and containment of intrusions and malicious activity.

As mandates such as HIPAA and Procurement Card Industry standards become effective, the consequences of employees mishandling sensitive and confidential data have changed with new enforcement ramifications. Information security awareness activities are being implemented to effect a culture change for all employees. Through security conscious employees, realization of return on investment in security technologies can be leveraged further as overall risk to data and systems is reduced.

Security will continue to be a fundamental component of the County's e-business strategy. Fairfax County's secure network architecture takes a greater defense-in-depth approach to network security design. A method of network partitioning and the development of a modular infrastructure are being deployed to better shield important resources within the network. This modularity achieves the ability to control the traffic that flows to and from one area of the network to any other. In the process of creating these partitions, the County information technology assets utilized will be designed and configured with specific security requirements based upon their level of trust in order to serve specific purposes.

Fairfax County VIRGINIA

# STANDARDS

# STANDARDS

## FEATURED IN THIS SECTION:

**Fairfax County Information Technology Standards**

# Fairfax County
# Information Technology Standards

## OVERVIEW

The Department of Information Technology establishes, updates, and retires technical standards throughout the year to ensure alignment, consistency, and modernization in the selection and design of business solutions across the County.

A product or platform is established as a standard through a governance process. This approach enables DIT to define and develop a portfolio of technology solutions that can be effectively managed and supported given available resources. Typically, projects in the concept stage come before DIT's Architectural Review Board (ARB) to discuss the technical approach and business objectives. Where the concept relies on new products or non-standard configurations, the details are assessed to establish general conformity to enterprise objectives. The ARB may steer the solution back to conformance, or it may authorize the use of a new product or configuration by granting a waiver. The ARB may alternatively recommend that the new product replace an existing standard, or that it be added to the list of supported standards. When DIT's executive management approves a recommendation, the standards are updated accordingly. Once adopted, the new product and its former standard, if any, are further classified as emerging (new), current (established), twilight (becoming obsolete), or sunset (retiring from support as of a known date).

When a standard is established, it means that the designated technology will be supported by DIT as applicable, and that the selection is in alignment with broader IT goals, objectives, and strategic direction. In some cases, a standard may be adopted in advance of procurement or deployment, to provide strategic direction for emerging business needs. Adoption of a standard is not intended to convey endorsement for, or recommendation against, any specific product.

Declaration of a standard indicates DIT's strongest recommendation for selection of the listed product(s) over any alternatives that may be similar or comparable. Generally, any solutions that will rely on the systems enterprise infrastructure, connect to the network, or depend upon DIT support must be fully conforming. Agencies using or selecting non-standard solutions may apply to the Architectural Review Board for a waiver on the basis of business needs and justification.

Standards are essential to sound cost controls in software licensing and maintenance, hardware, services, training, and integration. Having fewer platforms in use enables allocated resources to better support the information systems under management. Agencies are encouraged to invite DIT members to participate in selection and technical advisory committees for the Request for Proposal (RFP) process. In some cases, DIT and its ARB should be consulted in advance of an RFP, to help explain technical alternatives and develop the proposal language to support conformance with existing and emerging standards.

The standards shown here do not represent a comprehensive view of all the products in use across the County. The list is intended to convey the primary standards for the major solutions to be supported by DIT and/or delivered with DIT resources per the FY2009 IT Strategic Plan.

Revised January 2008

# Fairfax County
# Information Technology Standards

**(January 2008)**

## PLATFORM ARCHITECTURE STANDARDS:
## END USER SOFTWARE

| COMPONENT | CURRENT STANDARDS |
|---|---|
| Operating System | Windows XP/Vista |
| Word Processor | Microsoft Word 2003 |
| Spreadsheets | Microsoft Excel 2003 |
| Presentations | Microsoft PowerPoint 2003 |
| Database | Microsoft Access 2003 |
| E-Mail Client | Microsoft Outlook 2003 / Outlook Web Access (latest release) |
| Project Management | Microsoft Project Professional 2007 |
| Graphics | Microsoft Visio Professional 2007 |
| Web Browser | Microsoft Internet Explorer (latest release) |
| Antivirus | Symantec AntiVirus (latest release) for Workstations and Servers |
| Patch Management | Microsoft System Center Configuration Manager (SCCM) 2007<br>Windows Server Update Services (WSUS) |
| Mainframe Terminal Emulation | 3270 Emulation |
| Thin Client Access | Citrix Presentation Server 4.5 |
| Other | Must be approved for Business Unit standard image/requirements |

## PLATFORM ARCHITECTURE STANDARDS: END USER HARDWARE

| COMPONENT | DESKTOPS | LAPTOPS |
|---|---|---|
| Power | Single | Single |
| CPU | Intel Core 2 Duo Processor 800GHz FSB | Intel Core 2 Duo T7500 (2.20GHz, 4MB L2 Cache) |
| Disk Configuration | 80 GB , SATA drive | 80 GB, 7200 RPM Hard Drive |
| Media Drive | 16X DVD R/W combo drive | 8X DVD CD-R/W combo drive |
| Memory | 4 GB, Non-ECC SDRAM, 4 DIMMS | 4 GB RAM (2 DIMMS) |
| Monitor | 19" SVGA, Ultra Sharp, Flat Panel, DVI/ VGA | Wide Screen WXGA+ LCD Panel |
| Video Card | Dedicated 256MB ATI Radeon, dual monitor capable DVI | dedicated 128 MB NVidia |
| Interface Card(S) | Ethernet 10/100/ 1000 Base- T | Built-in Ethernet card |
| Operating System | Windows XP/Vista | Windows XP/Vista |
| File System | NTFS | NTFS |
| Maintenance | 4 Year on-site, next business day | 4 Year on-site, next business day |
| Additional Hardware Requirements | Sound bar | Port replicator, external mouse, keyboard and monitor if used as desktop.<br>Security Lock |
| Platform | Dell | Dell |

## PLATFORM ARCHITECTURE STANDARDS: HAND HELD MOBILE DEVICES

| COMPONENT | CURRENT STANDARDS |
|---|---|
| Platform | RIMM/Blackberry |
| Software Compatibility | Outlook Exchange (Downloadable), Active Sync, Date Book, Address Book, To do List, Memo Pad, Calculator |
| Connectivity | TCP/IP Internet or USB enabled |

## PLATFORM ARCHITECTURE STANDARDS: GENERAL SERVER STANDARDS

| COMPONENT | CURRENT STANDARDS |
|---|---|
| Procurement | Servers are procured by DIT as warranted by many factors, including current utilization of existing infrastructure, the requirements of planned projects, and the availability of specific funding for new equipment. Some platforms will share components and others will not, depending upon the unique circumstances for each project and product. Sharing and re-use are promoted when feasible.<br><br>Agency Project Managers work with DIT to develop a technical task plan and budget estimate for the project's hardware, software, middleware, peripherals, storage, maintenance, and connectivity. DIT will assess the requirements in light of the current environment (and other factors) to confirm which components must be purchased, and which will be paid for through DIT funding. |
| Operating System | Microsoft Windows Server 2003 Standard Edition<br><br>Microsoft Windows Server 2003 Enterprise Server (clustering or servers with 4 processors or more)<br><br>Solaris (latest release)<br><br>z/OS 1.4 |
| Thin Client Access | Citrix Presentation Server 4.5 |
| Hardware | Intel (Windows)<br><br>SUN (UNIX)<br><br>IBM Z-Series (Mainframe) |
| Backup | Tivoli Storage Manager 5.2<br><br>z/OS DFSMS |
| Storage | SAN |
| E-Mail | Microsoft Exchange Server 2003 Enterprise Edition<br><br>L-Soft LISTSERV |
| Web/Application Servers | Preferred: Microsoft Internet Information Server (latest release)<br><br>Apache Web server (if required by COTS package)<br><br>Tomcat (if required by COTS package)<br><br>JBOSS<br><br>BEA Systems WebLogic |
| Communications Protocol | TCP/IP |
| Configuration/Change Management | Infra Enterprise – ITIL Service Management |

## PLATFORM ARCHITECTURE STANDARDS: FILE / PRINT / WEB SERVERS

| COMPONENT | FILE / PRINT SERVERS | WEB SERVERS (INTEL) | WEB SERVERS (UNIX) |
|---|---|---|---|
| Type | INTEL | INTEL | UNIX |
| Power | Redundant, UPS required if not EOC-resident | Redundant, UPS required if not EOC-resident | Redundant, UPS required if not EOC-resident |
| Fault Tolerance / Disk Configuration | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 utilizing SAN if EOC resident | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 utilizing SAN if EOC resident | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 utilizing SAN if EOC resident |
| CPU | Dual 3.0 MHz | Dual 3.0 MHz | Dual 1.5 GHz |
| Network Interface Cards | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T |
| Operating System | Windows 2003 Server | Windows 2003 Server | Solaris (latest release) |
| Monitor | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack mountable Flat LCD monitor<br>Required if EOC resident |
| RAM | 4 GB<br>Minimum Cache 256MB | 4 GB<br>Minimum Cache - Database/Application specific | 4 GB<br>Minimum Cache - Database/ Application specific |
| File System | NTFS | NTFS | Solaris |
| Third Party Software Requirements | Symantec Antivirus, Enterprise Edition<br>MS SMS Client | Symantec Antivirus, Enterprise Edition<br>eTrust SiteMinder Agent<br>MS SMS Client | Symantec Antivirus, Enterprise Edition<br>eTrust SiteMinder Agent |
| Web Server Software | N/A | Internet Information Server (latest version)<br>Tomcat (if required by COTS package)<br>BEA Systems WebLogic | Apache (if required by COTS package)<br>Tomcat (if required by COTS package) |
| Platform | Dell | Dell | Sun |
| Maintenance | 5 Year, 24/7, 4 hour on-site, parts & labor included | 5 Year, 24/7, 4 hour on-site, parts & labor included | 5 Year, 24/7, 4 hour on-site, parts & labor included |
| Additional Hardware Requirements | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM & Tape Drive (DDS-4) |
| Pre-Install Options | None | None | None |
| Storage And Backup | Tivoli Storage Manager Enterprise Backup Client | Tivoli Storage Manager Enterprise Backup Client | Tivoli Storage Manager Enterprise Backup Client |

## PLATFORM ARCHITECTURE STANDARDS: DATABASE / APPLICATION SERVERS

| COMPONENT | DATABASE SERVERS (INTEL) | DATABASE SERVERS (UNIX) | APPLICATION SERVERS (INTEL) | APPLICATION SERVERS (UNIX) |
|---|---|---|---|---|
| Power | Redundant, UPS required if not EOC-resident | Redundant, UPS required if not EOC-resident | Redundant, UPS required if not EOC-resident | Redundant, UPS required if not EOC-resident |
| Fault Tolerance / Disk Configuration | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) | Operating System Drives - Raid 1 (Mirrored)<br>Database / Application Drives - Raid 5 (utilizing SAN if EOC resident) |
| CPU | Quad 3.0 Mhz | Quad 1.5 Mhz | Dual 3.0 Mhz | Dual 1.5 Mhz |
| Network Interface Cards | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T | Dual Ethernet 1000 Base-T |
| Operating System(s) | Windows 2003 Server<br>Windows 2003 Advanced Server (Clustering) | Solaris (latest release) | Windows 2003 Server<br>Windows 2003 Advanced Server (Clustering) | Solaris (latest release) |
| Monitor | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack Mountable LCD Flat monitor<br>Required if EOC resident | 17" SVGA Color, if non-EOC site<br>Not required if EOC resident | Rack Mountable LCD Flat monitor<br>Required if EOC resident |
| RAM | 8.0 GB Minimum Cache - Database/ Application specific | 8.0 GB Minimum Cache - Database/ Application specific | 4.0 GB Minimum Cache - Database/ Application specific | 4.0 GB Minimum Cache - Database/Application specific |
| File Systems | NTFS | Solaris | NTFS | Solaris |
| Third Party Software Requirements | Symantec Antivirus, Enterprise Edition<br>MS SMS Client | Symantec Antivirus, Enterprise Edition | Symantec Antivirus, Enterprise Edition<br>MS SMS Client | Symantec Antivirus, Enterprise Edition |
| Platform | DELL | SUN | DELL | SUN |
| Maintenance | 5 Year, 24/7, 4 hour on-site, parts & labor included | 5 Year, 24/7, 4 hour on-site, parts & labor included | 5 Year, 24/7, 4 hour on-site, parts & labor included | 5 Year, 24/7, 4 hour on-site, parts & labor included |
| Additional Hardware Requirements | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Internal Tape Drive for Root Volume Backup<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive(DDS-4) | Raid Controller<br>Rack mountable rails if EOC resident<br>Minimum 3 Open Slots to facilitate system expansion<br>HBAs (if connected to SAN) | Raid Controller<br>Internal Tape Drive for Root Volume Backup<br>Minimum 2 Open Slots to facilitate system expansion<br>Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive(DDS-4) |
| Storage And Backup | Tivoli Storage Manager Enterprise Backup Client<br>TDP for Oracle or SQL server | Tivoli Storage Manager Enterprise Backup Client<br>TDP for Oracle or SQL server | Tivoli Storage Manager Enterprise Backup Client | Tivoli Storage Manager Enterprise Backup Client |

## APPLICATION ARCHITECTURE STANDARDS: APPLICATION DEVELOPMENT

| COMPONENT | MAINFRAME | UNIX | INTEL | INTERNET / INTRANET | GIS |
|---|---|---|---|---|---|
| Database Software | DB2 | Oracle 10g | SQL Server (latest release)<br>Oracle 10g | N/A | Oracle 10g<br>Oracle Spatial DB |
| Application Development Frameworks | N/A | Java | .NET Framework (latest release)<br>Java | .NET Framework (latest release)<br>Java | .NET Framework (latest release)<br>ESRI |
| Virtualization | N/A | Zones/ Containers | VMware | VMware | N/A |
| Software And Development Tools<br>(Report Writing Products Are Listed On Page 8.) | COBOL<br>CICS<br>TSO<br>JCL | N/A | Microsoft Visual Studio 2005<br>Eclipse | Microsoft Visual Studio 2005<br>Eclipse | ArcGIS 9.1 & Extensions<br>ERDAS 9.0<br>ARC Internet Map Server 4.0/9.1<br>ArcSDE 8.3/9.1<br>ArcPad 7<br>Microsoft Visual Studio 2005 |
| Version And Release Control | SCLM | Serena Version Manager | PVCS | PVCS | PVCS |
| LDAP / Directory / Authentication | RACF | Native operating system (Solaris, Linux, AIX) | Active Directory<br>e-Trust SiteMinder | Active Directory<br>e-Trust SiteMinder | Native Operating system |
| Data And Process Modeling | MS Visio Professional 2007<br>Allfusion Erwin Data Modeler | MS Visio Professional 2007<br>Allfusion Erwin Data Modeler | MS Visio Professional 2007<br>Allfusion Erwin Data Modeler | MS Visio Professional 2007<br>Allfusion Erwin Data Modeler | MS Visio Professional 2007<br>Allfusion Erwin Data Modeler |
| Middleware (EAI) | webMethods<br>Jacada | webMethods | webMethods | webMethods<br>Jacada | N/A |
| Workstation Requirements | 3270 Emulation<br>TCP/IP Connectivity | Oracle Client Suite<br>ODBC Drivers | Oracle Client Suite<br>ODBC Drivers | MS Internet Explorer (latest release) | Terminal Server Client<br>Citrix Metaframe Client<br>Active X Plug-in<br>Active Directory Tools |

## PLATFORM ARCHITECTURE STANDARDS: ENTERPRISE SOLUTION PLATFORMS

| PLATFORM | CURRENT STANDARDS |
|---|---|
| Report Writing:<br>Departmental Reporting Needs | Business Objects<br>Microsoft SQL Reporting<br>Easytrieve Plus |
| Statistical Analysis | SAS |
| Enterprise Reporting<br>Business Intelligence | Selection Pending |
| Document Scanning/Imaging | Documentum Enterprise Content Management / Captiva |
| Web Content Management | Documentum Web Content Management |
| Web Search Engine | Verity K2 Enterprise |
| Survey Instrument Software | SNAP 8.0 ProNet Edition (w/Scanning module) |
| Correspondence Tracking | Intranet Quorum |
| CRM | Siebel |
| IT Services Management | Infra Enterprise – ITIL Service Delivery |
| GIS | ArcGIS 9.1 & Extensions<br>ERDAS 9.0<br>ARC Internet Map Server 4.0/9.1<br>ArcSDE 8.3/9.1<br>ArcPad 7 |
| Voice Communications | Avaya S8700s and G700s Servers |

# FAIRFAX COUNTY DATA COMMUNICATIONS STANDARDS

## NETWORK PROTOCOLS

| CURRENT | FUTURE |
|---|---|
| TCP/IP | TCP/IP only |
| SNA (DLSW) | |

## CABLING STANDARDS (Structured cabling based on the ANSI/TIA/EIA and ISO standards)

**Horizontal (cabling and pathways)**

| CURRENT | FUTURE |
|---|---|
| CAT5/5e UTP and SCTP | CAT6 UTP and SCTP |

### Outlets

| CURRENT | FUTURE |
|---|---|
| Category 5 / 5e Cabling | Category 6 Cabling |
| Siemens 4 outlet modular faceplates | |
| Color-coded inserts *(to identify the media being used in each outlet)* | |
| Voice and data terminated at the same faceplate | |

### Between Buildings/Backbone

| CURRENT | FUTURE |
|---|---|
| Dependent on Distance | Investigating wireless between buildings and within certain areas of buildings |
| 12 strand "single-mode" OFNP, single mode optical fiber.62.5/125 and 5/125 OFNP multi-mode and single-mode optical fiber | |

## FAIRFAX COUNTY DATA COMMUNICATIONS STANDARDS
**(continued)**

### DATA NETWORK STANDARD EQUIPMENT
The Fairfax County Enterprise Data Network is standardized on Cisco networking platform. Below are the specific models of equipment that are currently in use on the enterprise network. Platform families may be added or modified.

### ROUTING
Cisco 2600 Family
Cisco 2800 Family
Cisco 3800 Family
Cisco 4500 Family (Layer 3 Sup Engine)
Cisco 6500 Family (MSFC)
Cisco 6500E Family (Sup720-3b – Fabric Switch Enabled line cards)

### SWITCHING
Cisco 2950 Family – Wire Closet (Small to Medium IDF)
Cisco 3500 Family
Cisco 4000 Family – Wire Closet (Medium to Large IDF) - being phased out
Cisco 4500 Family – Wire Closet (Medium to Large IDF)
Cisco 6500 Family – Core applications (MDF)

### DWDM SWITCHING
Cisco ONS 11454 – I-Net Core

### FIREWALLS
Cisco PIX Family (505, 515, 525)
Cisco ASA Family (5510, 5540)

### CONTENT/CACHING ENGINE
Cisco 7305-K9

### CONTENT SERVICES SWITCHING/LOAD BALANCING
Cisco CSS-11500 Family